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# BETTER FRUIT

VOLUME VIII

APRIL, 1914

NUMBER 10

## THE CO-OPERATIVE HANDLING OF BY-PRODUCTS



A SUCCESSFUL CO-OPERATIVE GROWERS' CANNING ASSOCIATION

For full particulars read the article "Co-Operative Canning," by Mr. George Tinker, appearing in this edition.

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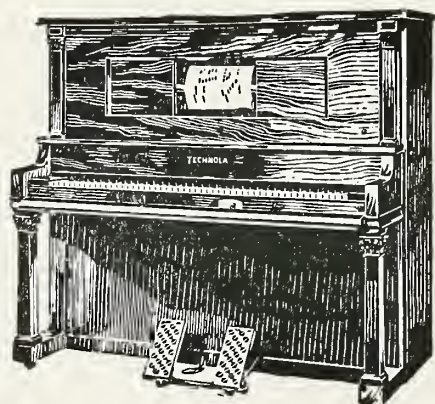


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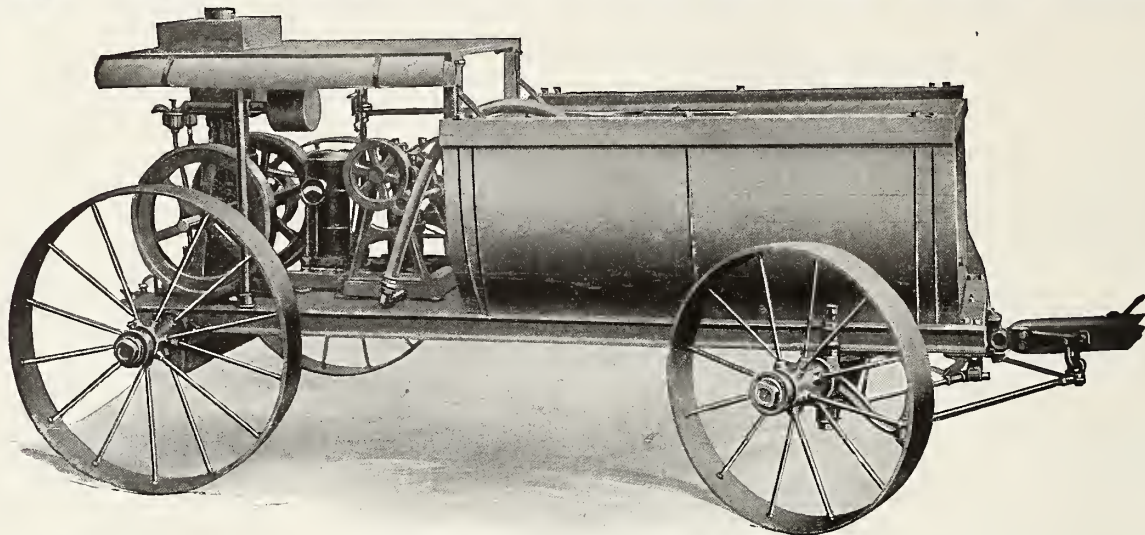
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# BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

## Co-operative Canneries

By George H. Tinker, Manager Benton County Cannery Association, Corvallis, Oregon

**A** GITATION over the co-operative marketing movement in this country is one of the burning political, economic, social and commercial issues of the day. The people are asked to believe and do believe that the "middleman" has been gouging the public for years, and that the time has arrived when the whole system of doing business must be turned upside down in a hurry or the country will go to the dogs. It is generally admitted that the subject of co-operation is chock full of interest, and justly so; at the same time there are those who believe that ninety-five per cent of the stuff we read and have drummed into our ears is pure buncombe aimed at the far side of the moon. There is mighty little that is practical in most of it, and indeed the "co-operative expert" who cannot work up an awful lot of enthusiasm among a crowd of farmers is a very poor one, surely. All sorts of schemes are being worked up under the cloak of the term "co-operation," until it is no wonder that in some quarters people are beginning to shy at it, under the impression that somebody is surely getting a big rake-off.

To listen to some of this talk, one would think the idea was a brand new one, when as a matter of fact it is almost as old as history. There is nothing new in any form of co-operation and the entire world is acquainted with almost every feature of it. It passed the experimental stage a long time ago. The biggest banks, the greatest railroad systems, the most gigantic trusts have been the result of co-operation. The timid fear it, and so nowadays do the monopolists—the stock gamblers and the money sharks who have profited most through its use. They object to its application for the benefit of the general public.

As a leading writer put it lately, "Co-operation only provides a way for men to do voluntarily and in their own interests what they are constantly doing under compulsion for the benefit of others." The secret of its success lies in the ability of a group of persons to put its principles into effect and stay put. Given a place and an opportunity, a co-operative enterprise will rarely fail if the membership is intelligent and willing, should occasion require it, to stand a temporary loss for the increased returns to be secured through loyalty to the enterprise.

Such an association, in the sense in which I understand it, is a business system, and not a revolt against injustice and oppression, as the so-called "experts" would have us believe. It

resembles an ordinary corporation in the respect that the capital and services of a number of individuals is pooled to conduct a business enterprise; but it is unlike the corporation in two tremendously important details, namely, first and foremost, the desideratum in a co-operative undertaking is the individual, and not the dollar, and secondly, the aim is not to conduct the business for profit, but to increase the profit of the individual business of its shareholders.

Being impressed with the principles and possibilities of co-operation, it was seized upon as a last resort by a number of growers of Benton County because it promised a means of escape

what the future outlook is are among the things I have been requested to advise you of, as well as to mention a few conclusions I have reached from my experience in a business that I knew absolutely nothing about when I became connected with it, less than two years ago.

Almost without exception every talk I have heard on the subject of co-operation has dealt mostly in generalities, leaving one quite unsatisfied on many points. It will be my purpose to take you behind the scenes and reveal the inner workings, for in our business there is nothing we wish to conceal. In giving the whole story, you may learn something to your advantage as well as something about the things to be avoided. As previously stated, the association had neither experience, equipment or capital. We had the essentials, however, in place and opportunity. There was located at this time on the bank of the Willamette River in Corvallis one of those defunct private canneries already alluded to. To secure the use of this establishment without capital was, of course, out of the question. Realizing, however, that a demonstration of some kind had to be made, the directors obtained upon their personal joint note the sum of \$1,350, for which they acquired an interest in and control of the existing canning factory. These men assumed all of this responsibility and gave their services absolutely without any cost whatever to the association. The Corvallis Commercial Club paid all of the cost of perfecting the organization and getting it started. It is a non-profit association, all of its operations being carried on at cost.

Article VII of the association's constitution provides: "Every holder of stock of this association shall market through the association all fruit, berries and other farm produce which the respective holders may have for market, and which the association desires to handle. Every grower shall sign a contract to market through the association such fruit, berries and other farm produce upon the request of the association, such contract to be uniform as to all holders and to be adopted by the executive committee. Failure to comply with the provisions of this section shall subject the holder thereof to forfeiture of stock at the pleasure of the executive committee. Upon forfeiture thereof the name of such holder shall be stricken from the records, and such stock shall revert to the association. Members may be reinstated upon such conditions as the board of directors

### Features of this Issue

CO-OPERATIVE CANNERIES

CO-OPERATIVE ORGANIZATION,  
FINANCING AND  
MARKETING

THE CANNING OF FRUITS AND  
VEGETABLES ON THE FARM

MORE LIGHT ON THE WINTER  
BARTLETT

CODLING MOTH CONTROL

from the intolerable conditions resulting from an oversupply of product, inadequate facilities for transportation and primitive methods of marketing. There was at the time much of common distress, and the motive was not so much gain as it was escape from actual loss. So on February 17, 1912, the Benton County Growers' Association, of which I am secretary and manager, was organized in Corvallis. The men chosen at the time to manage its affairs knew little of the principles of co-operation, but their executive ability was above the standards of ordinary business. Owing to the failure of so many private canneries in the Willamette Valley, the directors soon found it a very difficult matter to interest capital. There were plenty of men who desired to join, but few who were willing to put up any money. So the association started on its career without experience, without equipment and little or no capital. How it has progressed up to this time, what difficulties have been met with and



may fix. The association shall market all fruit, berries and other produce accepted by it for market to the best advantage, as in the discretion of the executive committee may seem best. The board of directors shall from time to time establish grades of fruit (other than apples), berries and other produce, provided such grades shall substantially conform to like grades in other proven districts. The proceeds of the sale of fruit, berries and other farm produce, together with all profits from whatsoever source derived, shall be placed in a general fund, from which shall be paid all expenses of management of the association, including the salary of manager and other agents, but which said expenses shall be classified and charged as may be determined by the executive committee; provided that expenses incidental to particular shipments and independent of overhead or fixed charges, shall be charged against the respective shipments to which said expenses were incidental. After the payment of expenses there shall be deducted one per cent of the balance, and such sum shall be set apart as a sinking fund for the acquisition of permanent properties. After the payment of the sums as above set forth the balance shall be distributed ratably among the respective growers and in accordance with their respective interests, such interests to be determined by the executive committee, and provided that advances may be made to growers from time to time as the executive committee may direct. The board of directors shall adopt a suitable label, which shall be placed only upon the shipments made by or through the association."

As they lacked the necessary experience, the directors immediately concluded that a first-class experienced canner was essential, so they set about securing the services of such an individual. This was a difficult matter and it will continue to be such until our agricultural colleges begin turning out cannery managers and superintendents especially educated for the very important and remunerative work. However, we were fortunate in getting an experienced canner from California. He overhauled the old plant and put it in running order. Then we selected one of our best local and loyal boosters and put him in as manager, agreeing to pay him one per cent of the gross business done by the association. The association did about \$11,000 worth of business in canned products and paid the growers reasonable prices. It took some money to handle this business. It was secured partly by issuing loan certificates in denomination of ten dollars, bearing eight per cent interest, and partly by borrowing from one of our local banks. We are fortunate in having one bank in our community that is progressive and abreast of the times. The others did not seem to consider our scheme of marketing a legitimate business enterprise.

Owing to the good showing made in 1912, while a small business was done, it did a great deal to stimulate interest,

and plantings of small fruits and vegetables greatly increased. It was soon found that if the crop of 1913 was to be taken care of additional buildings and machinery were a necessity. We must have more money, so we secured authority from the board of directors to issue additional loan certificates in denominations of ten dollars, payable on or before October 1, 1916, bearing eight per cent interest. On these we secured the greater part of \$6,000, which was immediately invested in additional buildings, machinery and equipment. This left us a somewhat restricted working capital, so recourse was again had to the banks. We have packed into cans the past season something over one million pounds of fruit and vegetables. These we have marketed in the main on the Pacific Coast, from Seattle to Los Angeles. We have also placed some cars in Kansas and Oklahoma territory and made some shipments as far east as New York City. We have our own trade-mark and labels and a goodly proportion of our product goes out with our own labels upon it. Our goods are sold for cash and up to this moment we have never had a shipment turned down. We are careful in grading our fruit and particular about what goes into the cans, and we insist upon the cans being filled to the limit.

Raspberries, blackberries, loganberries, strawberries, apples, pears, cherries, gooseberries, rhubarb, beans, pumpkin, squash and cabbage were packed in cans, and several cars of fresh apples and potatoes have been marketed at splendid prices, with more to follow. The total number of pounds of these products delivered to the cannery during the season just closed was 1,039,659 pounds, as follows: Kentucky Wonder Beans, 65,598; Burpee's Green-Pod Beans, 122,883; Refugee Beans, 5,686; tomatoes, 16,567; cabbage, 21,001; pumpkin and squash, 65,635; rhubarb, 30,744; strawberries, 81,921; loganberries, 153,698; Phenomenal berries, 608; blackberries, 27,745; gooseberries, 31,032; raspberries, 8,186; currants, 381; pears, 111,522; apples, 198,977; Italian prunes, 63,404; Petite prunes, 3,526; plums, 21,200, and cherries, 8,245, a total for canning purposes of 1,038,659 pounds, equivalent to about 44 carloads of 40,000 pounds each.

The receipts of product by rail from different points in our territory have been as follows: Albany, 20 cars; Monroe and Junction City, 3 cars; Irish Bend, 2 cars, and a large number of less than carload shipments. We received from the American Can Company in Portland sixteen carloads of empty tin cans. Of box material we received nine cars, and more to follow. Wood for fuel, eighteen cars. Apple shipments to date have been five cars; can crates shipped to Portland have totaled fifteen cars and there were twenty cars of empty boxes, crates, etc., returned to growers. Therefore the total number of cars handled in and out thus far this season, including canned goods, will be about 150 cars. Thus, you see, a little business has gone

to the railroads. They deserve it, though; they have met us squarely and have proved to us one thing, and that is, when a group of farmers can show them that they have the ability to co-operate among themselves the railroads are quite ready and anxious to co-operate with them. The rates on fresh fruits and vegetables to our cannery have been materially reduced at our solicitation, thus enabling growers to combine their products and deliver them to us at a reasonable cost. In this way we are gradually securing the volume of business so vital to the success of any manufacturing plant, and especially a cannery.

As stated, the season run on canned foods has just closed. The greater part of our pack has been sold, and about sixty per cent of it has been shipped. I regret that at this time our books have not been closed, so as to enable me to give the exact figures which will be paid the growers for the various commodities canned. From my knowledge of the conditions, however, I feel justified in saying that this will be approximately the same as last year, when we paid the following prices: Cull apples for canning, \$9.00 per ton; pears, \$20.00; blackberries, 3 cents per lb.; loganberries, 3 $\frac{3}{4}$  cents per lb.; gooseberries, 3 cents per lb.; Kentucky Wonder Beans, 1 $\frac{1}{2}$  cents per lb.; Burpee's Green Pod, 1 $\frac{3}{4}$  cents per lb.; Refugee Beans, 2 $\frac{1}{2}$  cents per lb.; rhubarb,  $\frac{3}{4}$  cent per lb.; Royal Ann cherries, 3 cents per lb.; sour red cherries, 3 cents per lb.; pie plums,  $\frac{3}{8}$  cent per lb.; No. 1 prunes (Italian), 1 cent per lb. This season's results may vary a little. More than the foregoing prices will be realized in some instances and less in others, owing to unfavorable weather and labor conditions experienced.

We have distributed a couple of thousand dollars among our growers for apples thus far sold at prices ranging from \$1.00 for third grade to \$1.56 per box for first grade, f.o.b. cars at loading point. We consider this splendid, especially those of us who received a nickel per box last year, and paid over twice that much per box for giving them away. Please understand that what is here said is not intended as a slam at anyone, but merely to draw attention to the advantages of the grower doing his own business. There is no use to get "sore" at the commission man. If we farmers haven't the brains to get together and do our own business and continue to turn the products of our farms over to some stranger to handle as he pleases, we have only ourselves to blame.

Another thing I want to call your attention to, and it is this: No matter what other mistakes we may have made, we never made the error of letting the other fellow get our goats unless we got our money. We ship our goods to our own order and attach the bill of lading to a sight draft, which we put through the bank. When the draft is paid the bill of lading is turned over to the purchaser and that is all there is to it. Up to this time but one



such draft was returned unpaid, and that was for a small shipment of \$229 worth of gooseberries. The concern, and it was a private cannery by the way, wrote me a letter admitting that they were out of funds temporarily and if I would leave the goods at the depot for a week or so they would pay up, which they did.

Taking all things into consideration, we think we have been fairly successful, at least a portion of our membership does, the portion which does not feel that they have any right to expect to get back from their own association in one year all that they have handed over to the middleman during the past ten or twenty years. During the comparatively short period of our existence we have had a number of setbacks and the work has been difficult, rendered so by features that will now be dwelt upon.

Lack of sufficient working capital has been one of our chief difficulties. We need more money to handle the increased business and efforts will be made at our annual meeting to secure it. We require a much larger warehouse for canned goods. Various plans are on foot to accomplish this. We have an idea that it would be possible to make a separate incorporation and take advantage of the warehouse laws of the state, so as to render the warehouse receipts available as collateral for loans. In securing the funds on the loan certificates previously mentioned our growers were appealed to, but there was only a partial response. Some did more than their share, while many more did nothing. With a heavy crop to handle, some of us thought that on account of the benefits to Corvallis from having a manufacturing plant in the city, with a pay roll of something like \$13,000, with possibilities of a steady increase, we would be justified in obtaining loans from the merchants and others of the city. They responded with something like \$2,500, which enabled us to complete our buildings. Now we did this and a full measure of grateful acknowledgment is here made to these men for lending us their money. But such methods of financing a growers' co-operative enterprise are altogether foolish and not to be thought of. Naturally there is right here a conflict of interest, and in consequence of it we refrain from doing things that will be of great advantage to our business, because we cannot consistently run counter to the merchants who loaned us that money. For instance, we could arrange to handle a big business in such staples as flour, feed, rice, sugar, sacks, twine, fertilizer, etc., at a great saving to our members, as these can be sold to them at cost f.o.b. warehouse, plus ten per cent, as it is being done elsewhere—in Puyallup, Washington, the Puyallup and Sumner Fruitgrowers' Association does a business of \$100,000 per annum in such lines. They also handle the eggs of the members to fine advantage. Besides the direct saving mentioned, this would enable us to keep our expert help em-

ployed when the cannery is shut down. The same manager could handle all, and thus the overhead charges would be less per unit, being spread over a much larger volume of business. However, until this obligation is liquidated we are barred from this co-operative feature, and thus you have additional emphasis laid on the statement that, to be successful, the farmer must do his own business. It is necessary to be prepared to make advances to growers when they bring their fruit and produce to the cannery. This results in better feeling and increased volume of business. The grower who is pressed for money will sacrifice his product anywhere to get the cash, while many times the cannery is shut down for lack of material, with expenses going on. Then, again, the market is frequently broken by weak packers who have to sell to meet obligations, and that is bad for everybody.

We suffered badly during the season because of lack of sufficient labor in the cannery. Then, too, the laws regulating the hours of female labor affected us. Many were willing to work extra hours if this could have been arranged. It is to be hoped that the authorities will see fit to allow special canners' permits for adult female employees to work until at least 9 p. m. during certain months of the canning season.

Disloyalty of some members is expressed in various ways, such as peddling the good fruit and bringing the cull stuff to the association; putting rotten fruit in the bottom of the boxes, and so on. Yelling their heads off in the newspapers and on the street corners instead of going to the board of directors with complaints, etc. Some growers do not live up to their contracts very well, which, of course, makes it bad for the business. A large proportion of the pack must be sold as futures and jobbers get "sore" if the goods are not forthcoming, especially in favorable seasons.

Reference to insufficient volume of business has already been made, but I wish to speak of it again. Our experience has proved to my satisfaction that you cannot have canneries at every cross roads. I am aware that very many people hold to the opinion that the small cannery is the one thing necessary to solve the marketing problem. I got this notion out of my bonnet long ago. Remember that the minute you get into business you have to compete with the established canners. Therefore, I think that while we all believe in co-operation, the best way to compete with the commercial canner is to get upon a commercial basis ourselves. Arrange to serve a wide area, thus securing a larger membership and more product to insure a steadier run over a larger period. You do not have to surrender a single tenet of co-operation to do it either.

Our warehouse has proved entirely too small. When I was building it last spring some of the growers thought I was crazy and commented on it, saying, "You will never use all that warehouse

in five years." As a matter of fact lack of room has been one of our chief troubles. We were obliged to hire a warehouse two blocks away from the cannery and it was expensive handling goods that way. You see you are liable to sell a number of cars of goods in April for delivery in September or October, some of which may be packed in June, or you may sell a number of cases of mixed goods, which may take you from June to November to get together, so space must be had to store goods. Restricted quarters are frequently the cause of serious mistakes, as you can readily imagine. Goods may get mixed and that sort of thing.

The following are some thoughts I would seek to specially impress upon the minds of all growers interested in the problem of by-products:

Education and co-operation absolutely necessary.

Things must be done in a comparatively large way to be successful.

The question is frequently asked, "Is there not danger of overdoing the canning of the various products, such as have hereinbefore been mentioned?" In answer to this I would say that there is not in a general way any such danger. When you take into consideration that the City of New York uses \$150,000,000 worth of canned goods per annum, one can get a pretty good idea of what the balance of the country must use. It is something enormous. We could easily have sold one hundred carloads more canned goods than we packed this year if we had them.

Necessity for maintaining thorough organization of the association for fresh fruits especially, in good years to take advantage of conditions always. In times past growers on the Pacific Coast have failed to secure living prices even when there was a crop failure in the East, due to lack of organization.

Rigid inspection of all fruit, canners' weights, etc. One of the most important things for a new cannery is to learn to put up quality of a uniform grade, so that you can open a dozen cans and find all the same grade. This is usually the stumbling block of new canners and some old ones. When packing, constantly keep the consumer in mind, not your grower, or the jobbers, or the retailers. The consumer is the final arbiter.

A feature of importance that every cannery should give attention to, at least until a better method of reaching the consumer more directly is devised, is that of having good brokers in every market. Do not depend upon the efforts of a few brokers to market your goods. If you have at least one hundred brokers in as many markets you will find less difficulty in handling your output. You will easily recognize that this is advice not usually given by brokers. They always say, "Let us handle all you have. We can sell it."

In the first place canvass hard and thoroughly your close-by trade that you naturally supply. The closer home you can get your business and sell your output the better it is. Next, if you go



away from home to sell goods the first duty is to make the buyer and your broker acquainted with what you are packing. This is absolutely essential for a new broker.

One great advantage that California has over Oregon and Washington is that they pack full lines. They have an established business, their customers know what they are packing and all of their grades. Hence, I repeat, sell your goods as near home, where you have a personal acquaintance and where you can go and see the people and carry the goods to them, as you possibly can. When your pack is great enough that you desire to go away from home, be prepared to furnish your brokers with samples, and plenty of them, of everything you pack. That is the first step to establish yourself in a far-away market. Many new canners will not do this. They look at the cost of samples and cannot see far enough ahead for results. Another thing I think new canners, and, I am informed, old ones are prone to do, is to pack too many grades. They fail to remember that the cost of the can, the goods, the cost of packing and the freight, is just as great to pack a water grade as it is a good syrup grade, a little sugar being the only difference. The aim of every packer should be to pack the best he can and let someone else pack the worst.

When I was investigating the cannery question at the time we were organizing, I got a letter from an old experienced friend in the East, who said, "This is just a line privately: farmers' canning companies throughout the East have always been failures. They are not business men, and they want to charge their own association too much for the raw material which they themselves furnish. As a matter of fact, new canneries nearly always fail two or three times before they make a success." A good strong manager will keep you out of this.

A canner should always carefully figure the correct cost of putting up his goods. But few canners know how to do this. Then the price should be made with reference to cost and not with reference to what some one else may be asking. Another feature that should be kept constantly in mind is the retailing price of the goods. For instance, blackberries are quoted \$1.15, standard \$1.25, extra standard \$1.30, extra special \$1.40. We find that neither of these goods can be retailed for 15 cents, and they will all be retailed at the same price, 20 cents. Now it is foolish to pack so many grades, all of which must be retailed at the same price.

Our experience proves to us that it is very essential that a first-class man be available for duty out in the territory among the growers. He should be a man capable of giving advice regarding when, where and how to plant and cultivate and care for the various crops. He should be competent to estimate the various crops, and by keeping in close touch with progress the growers the making he would be able to keep the

manager, and through the manager the selling force, advised as to crop conditions and probable yield, character of product, etc. He should look after the movement of crops into the association's warehouse and cannery, advise growers when to harvest and the condition in which the product should be delivered. In many ways he would save the association members many times the value of his services, and be of great advantage to the association in other departments, especially the selling end. The agricultural colleges should supply such men. Some of the largest and most reputable canners are guiding and controlling the crops which are to become the raw material for canning purposes. Something along this line is recommended to the attention of co-operative associations.

The North Pacific Fruit Distributors, or an organization of a co-operative nature formed along the same lines, should control the sale of the canned food products of all co-operative canneries in the Pacific Northwest. The by-products will naturally become much larger in volume than the fresh. This matter has already been taken up with the North Pacific Fruit Distributors and they have it under consideration. Association and cannery supplies, such as cans and other packages, boxes, crates, spray materials, sugar, salt, etc., could be bought in large quantities at a very large saving. One of the most beneficial features would be the standardizing of the pack. Every co-operative canning establishment would then know what specifications to pack by, and I know of no feature more important than this. There is just the same amount of crazy competition in the canned goods business as there was in the fresh fruit business before it was organized. The consumer would certainly appreciate the change.

As the co-operative association increases its business it will naturally want cold storage facilities. For fresh fruits, cold storage at point of origination means a great saving in handling, and will cut out serious loss in other respects. During labor troubles, if they should occur, perishable fruit for canning purposes could oftentimes be saved from total loss. Eggs of the growers could be stored when prices are low. A revenue could also be derived from the storage of other commodities of the growers belonging to the association.

It is absolutely necessary that the strictest attention be paid to the sanitary conditions in and around a canning establishment. A well lighted, well ventilated and clean cannery is an inviting place for anyone to visit, while the contrary is the case if these features are not enforced. Another thing, we find in our establishments where sanitary measures are very strictly insisted upon that we have less trouble in keeping our help. The help like to work in a nice, clean, well ventilated place. Besides this, Uncle Sam now has inspectors traveling around through the country, who are likely to drop off the train some day and shut up the dirty canning establishment, which is as it

should be. There are canneries in this part of the country that should be closed now, because they are dirty. The State of Oregon should pass sanitary laws for the government of such institutions similar to those of some of the Eastern states, and then see that the law is enforced.

I have great faith in this co-operative movement when sanely conducted. I am aware that there was a time when it was thought that corporations could not succeed, but the inherent advantages of corporate industry made themselves felt, and we have seen corporations to a great extent crush out the individual. I have a strong belief that as we study the inherent advantages of co-operation, as applied to marketing, and come to a better understanding of those advantages and they become manifest to us, that after a period of adversity, of struggle and of gradual advancement co-operation will ultimately become supreme in the world of industry.

### Tent Caterpillars

There are two common species of tent caterpillars in Washington, specimens of which are often sent to the State Experiment Station for advice as to how to combat them. One of these lays eggs on twigs the size of a lead pencil, making a girdle of the small eggs around the twigs. The other species lays its eggs in a blotch the size of a ten-cent piece, covering the eggs with a frothy material. Tent caterpillars are particularly abundant in the spring. They are easily recognized by their habit of spinning a web in the forks of some branch near where the eggs have hatched. At times they migrate from their tents to feed on the foliage. During cold days they are apt to gather together in numbers on the trunk of the tree. They feed on a great many kinds of plants in Washington, working in the alder groves and thence into the orchard.

Tent caterpillars can be controlled by several methods. During early spring the egg masses may be sought and destroyed. The ordinary sulphur-lime spraying of spring destroys a great many of these eggs. When the young hatch they may be burned in their tents by means of a torch. A common practice is to fasten on the end of a pole a funnel of wire screening and place kerosene rags at the bottom of the funnel. This sort of torch will catch those caterpillars that drop when they feel the heat. A plain torch would permit such caterpillars to escape. The tents may be cut out of the trees when first noticed or the adjacent branches may be sprayed in the spring with an arsenical. Orchards that are regularly sprayed in the spring with an arsenical rarely suffer from an attack of tent caterpillars. It is claimed that the new spray, arsenite of zinc, is particularly adapted to tent caterpillars. It is a concentrated poison and may be used one pound to 80 or 100 gallons of water for this pest.



# Co-operative Organization, Financing and the Marketing

J. H. Robbins, General Manager North Pacific Fruit Distributors, before Annual Meeting Washington State Horticultural Association, Walla Walla

**M**ODERN civilization is based upon confidence and co-operation. Confidence is the foundation upon which all modern business rests; co-operation is the keystone that unites the separate units and gives strength to the whole structure. The true test of civilization is therefore found in the ability of mankind to co-operate. The predominance of either good or evil within a given community is to be found in exactly the degree that the individuals of that community may have co-operated to produce good or evil.

In the dark ages before mankind was possessed with confidence and the true spirit of co-operation, the world was ruled by brute force, barbarism and savagery. All wealth, man's very subsistence in fact, was then dependent upon physical valor, brute force, or cunning of man over man, tribe over tribe, or nation over nation. Not until that great teacher of humanity, the founder of Christianity, came among us were the characteristics of mankind transformed to those natural instincts of kindness, brotherly love and confidence which today distinguishes modern civilization from the savagery and barbarism of the dark ages.

The skeptic, the pessimist, the obstructionist, who still persists in utilizing his God-given powers toward the creation of discord,—who persists in cultivating strife and encourages disbelief; who would displace confidence and co-operation with chaos,—has fallen below the standard of his time, has bred back, so to speak, and belongs to those dark ages when the spirit of savagery, suspicion and treachery ruled. He has no rightful place upon the splendid program of today among those christian spirits whose confidence in one another and whose co-operation among one another has rendered possible every achievement of modern times. Herbert Kauffman says of him: "He peers into the hearts of children for guile and deceit,—he tests the golden impulses of great-souled men for streaks of brass,—his chief happiness is in the pursuit of misery, and when his hunting is successful he divides his woes freely with all of his acquaintances."

Webster defines co-operation as "operating together to one end: concurrent effort of labor." Another has said that "All harmony is the result of co-operation, whether it be of human effort or of the laws of nature. Without co-operation there is lack of harmony, discord and failure in everything." The co-operation of mind, will and body makes man and the works of man. The co-operation of man makes communities, sections, nations. The individual man is a helpless unit, an atom in the sea of existence. The co-operation of a body of men in a community makes for strength, and that strength is just in proportion to the strength of the co-operation of the community for the good of the com-

munity. A co-operative organization does not, as many growers appear to assume, undertake to provide benefits ready made,—it provides only the necessary rules through which its members may operate together for a common purpose,—the necessary machinery for securing concurrent action and combined effort in the accomplishment of equal or joint benefits.

Co-operative organization as applied to the needs and requirements of the fruit industry, implies a partnership or union of interests supported with co-operative effort and joint actions. To give effective expression to which definite rules must be prescribed and agreed upon for the government of its individual units or members. Statutes, both national and state, prescribe the necessary methods by which this may be accomplished, usually through articles of incorporation, containing a full declaration of its purpose, and the adoption of by-laws, prescribing rules for its government within the declared purpose for which it was legalized. It is not practicable or wise to leave to single individuals the working out of the innumerable problems associated with the fruit industry. The standardization of grade and pack, insect control, and the eradication and elimination of tree and fruit diseases, the study and development of proper orchard practice, the securing of protective, remedial and beneficial legislation, successful resistance against the occasional unjust exactions of transportation companies or other public service corporations, the procuring and maintaining of adequate machinery and proper efficiencies for marketing and substantially all matters which affect either the transportation, distribution or marketing of his fruit are problems demanding the more formidable strength of union and are concededly beyond the mastery and control of single individuals, and such as can best be solved or managed through co-operative organizations.

The membership of a growers' organization, to become effective in results, must be possessed with the true spirit of religion of co-operation,—it must first grasp the essential meaning of co-operation,—and be considerate and tolerant in all relationships with one another; confidence is the chief requisite, the bulwark, the very foundation upon which the structure must securely rest; the basis of the organization should therefore be manhood, not dollars; a bond of confidence, not merely a union of unequal interests in order to legalize control. A majority of the so-called co-operative organizations are but hybrids or misnomers, and are not based upon those fundamental principles of co-operation through which perpetual equity and fairness has been pledged in the charter or organic law of the organization; their declarations instead are man-made and subject to change or revision

by majority vote of the stockholders. The mere fact that membership is evidenced by shares of stock, a thing separate and apart from his land, and subject to the reach of judgment creditors, the laws of descent and statutes of distribution are usually sufficient to shake a farmer or grower's confidence in such organizations, and his common knowledge that failure has attended substantially all attempts to limit the holdings, dividends and voting power of such stock companies, where the stakes were sufficient to invite the play of man's selfishness, is substantially destructive of all confidence.

The mischievous and baneful influence of so-called mutualized stock companies or those otherwise clothed in terms and expressions implying unalterable co-operative control and benefit while in reality they have their basis in selfish or profit-making stock investments, is largely responsible for the grower's distrust and lack of confidence in co-operative organizations. We therefore entirely eliminate from our conception of an ideal growers' organization, all those based upon capital stock, and argue with all the emphasis at our command for a voluntary industrial democracy,—a strictly mutual non-profit co-operative organization, owned and controlled exclusively by growers, based upon individual membership, guaranteeing equal power and voice and sharing proportionately in both benefits and risks, having its basis for control in manhood, not mere dollars.

Of the numerous associations, unions and exchanges now in operation throughout the Northwest, the "Yakima plan," in our estimation, most nearly approaches the ideal. The one essential requisite is confidence. This can best be secured and maintained through the knowledge of possession, the realization of actual individual ownership and control. To secure absolute perpetual control, membership should be restricted to actual growers and be attached to his land, non-transferable except with the land. Each member should be required to execute a definite binding contract, specifying his acreage and requiring the delivery of all fruit grown thereon to his local association; penalties somewhat in excess of the usual marketing charge should be prescribed as liquidated damages in case of the member's refusal to observe the terms of his contract. Contract provision should also include the grower's assent to abide by the by-laws, rules and regulations of his association. The by-laws should further make it mandatory upon the proper officers to file impeachment proceedings against any member for selling "outside" or when guilty of other conduct substantially disloyal and destructive to the interests of his association. A substantial membership fee should be required, and both the manner of acquiring and method of cancellation should be sur-



rounded with such formalities, costs and penalties as will inspire within the member a religious observance of all the tenets, rules and requirements of his association, and as will impress upon him the true value and protective character of his membership. His full and equal voice in the adoption of by-laws and of all rules promulgated will reassure him against arbitrary actions or oppressive measures.

The charter or articles of incorporation should specifically provide that no service shall be performed for hire or profit, and that services shall not be performed or supplies furnished to persons not members of the association. One of the cardinal provisions should be that all fruits shall be marketed on a level basis, of actual cost, with all books and accounts open for inspection at the pleasure of its members. These broad principles of full co-operation should constitute the real basis of association effort. Membership contracts should preferably run continuously, giving the growers the privilege of withdrawing the same by giving due and proper notice at a definitely stated time after the close of any fruit season. The privilege of withdrawal to extend to his contract only if he so elects, thereby constituting him thereafter a non-participating member without voice, vote or the right to hold office, or to participate in the purchase of supplies, marketing or benefits. This insures to contracting members absolute freedom from dictation or interference on the part of those who have nothing at stake and are not sharing in the costs and responsibilities of the association. When such member again executes the regulation contract he is immediately restored to full membership, with all the privileges and benefits of the association without the payment of additional membership fees.

In the fullest realization that every possible avenue has been closed against personal advancement or private gain, every stone in the structure should denote exact fairness and betoken confidence. Politics should be entirely eschewed, to which end we strongly recommend that the precedent or principle be thoroughly established disqualifying members from positions of management or other active control over the association's affairs. Job hunting has probably wrecked more associations than has any other one cause. The dismissing of a member from active management almost invariably carries with it dissension and division of membership. The success and perpetuity of such organizations are best secured through the employment of qualified, capable men, independent of and from outside the membership; their dismissal or elimination is much more easily effected and usually without danger of a division of the membership. Retain no man in employ except upon his merits; provide no roll for pensioners, maintain no "pie counter" for members, should be among the cardinal principles of every association. Organizations are usually created through some necessity of the times, for the accomplishment

of some specific purpose or to correct some existing evil. Every safeguard that the ingenuity of man can devise should be utilized to prevent a perversion of its purpose,—to prevent abuse of its power, to lay up the bars against self-interest and private gain. They should see to it, then, that mere ties of acquaintance, of friendship or of good fellowship be not their undoing; they should have the fortitude and courage to be businesslike, to be their own masters and exercise that control safeguarded them in their charter and by-laws and not permit themselves to become mere tools of some designing job hunter or political machine.

Growers as a rule are too prone to magnify the importance of a grower's experience as a necessary requisite or qualification for managing positions. The duties devolving upon a manager are largely executive,—the details are composed mostly of business and financial problems requiring specialized business talent, something akin to that possessed by the successful manufacturer, merchant or banker. A grower may possess these natural qualifications, yet the time devoted to becoming an expert horticulturist will likely have precluded his acquiring the broad business experience that is the essential qualification of a successful manager. G. Harold Powell, formerly pomologist and acting chief of the Bureau of Plant Industry of the United States Agricultural Department, and now general manager of the California Fruitgrowers' Exchange, the largest and most successful co-operative fruit-marketing agency in the world, says in the Department's Year Book of 1910: "The successful handling of a co-operative association requires a manager who is competent to assume the general direction of the affairs and business of the association,—he must have a high order of business ability, sterling integrity, unusual tact and judgment in handling men and unlimited energy. An association under any other kind of management is not a serious business undertaking." He further adds: "It is more difficult to direct a co-operative association than a stock company or corporation. In the latter, the manager is responsible to a board of directors, but the stockholders do not often take an active interest in the management of its affairs. In the co-operative association the manager is also subject to the advice and control of the board of directors, but the farmer who joins with his neighbors in an association is likely to take more than a passing interest in the management of the association. A manager who cannot hold the interest and the confidence of the members, who cannot make them feel that they have a voice in the management, and who fails to develop a progressive, constructive business policy, will fail in handling a co-operative organization. Nor can such an organization succeed if the directors do not realize that it must have a strong, competent, aggressive, well-paid manager at its head. It is not too much to say that no single

factor has operated against the success of the co-operative associations as much as the incompetent managers selected by the directors of the associations to handle them. A board of directors cannot manage a co-operative agricultural association. The outcome of the organization will be determined in large degree by the character and ability of the manager."

The supreme test of a successful growers' organization is confidence. Its organic law, by-laws and every rule promulgated must therefore bear unmistakable evidence of fairness in its every operation. To inspire confidence the greatest possible degree of local government should be accorded the membership. This has been quite successfully accomplished when founded upon the plan of our federal government, wherein certain powers of control are delegated to counties, others to states, and still others to nation. Local associations performing relatively the same functions that counties would perform under our plan of government, sub-central associations dealing with the larger problems that affect the relationships of the local associations affiliated with it in much the same manner that states govern and control the counties or townships, falling within its borders; when these in turn affiliate through a central clearing house it then becomes the national head, having control over inter-district or inter-state matters, and such as cannot properly be delegated to or satisfactorily controlled by the local or sub-central organizations.

Each local association should be separately incorporated, with absolute control over all matters of local character. Its affairs should be governed by a board of trustees, five or more in number, regularly elected by the members. A president, vice-president, secretary and treasurer, and one or more, preferably two, trustees to the sub-central board should be elected annually from the board of trustees of each local association. The sub-central board is thus created from representatives sent up from the local associations, from which number they annually elect the proper officers to govern their body, together with their representatives upon the board of the central office. Thus it is that control and authority is passed up from the growers themselves, each having an equal voice in the selection, to and through their local, sub-central and central office; and note that when the membership is attached to the soil and ipso facto ceases with sale or transfer of the land upon which it is based that full authority and control over all affairs of the organization is perpetuated in a membership composed exclusively of growers, with the bars most effectually and forever closed against interference by non-growers. It then becomes a growers' organization not only in name but in actual reality.

The progress and advancement of a given community, together with its trade prestige or superiorities, is usu-

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# The Problem of Utilization of Our By-Products in Oregon

Professor C. I. Lewis, Chief Division of Horticulture, Oregon Agricultural College,  
before Factories Promotion Congress, Portland, Oregon

**T**HIS Congress is known as the Factories Promotion Congress. It would therefore seem absolutely unnecessary for me to dwell in any way upon the great desirability of establishing factories of various sorts here in Oregon. Our presence here is already a potent token that we are all in hearty sympathy with this idea; that we all believe there is a great possibility in this idea, but we are not all so sure as to the proper methods of procedure to secure such factories. I have often felt that in our natural products at least we have wonderful opportunities; that in the industries connected with agriculture, mining, lumbering, etc., there is an almost unlimited field for development and that it may be much easier to introduce such factories than it will be to introduce factories dealing with the handling of raw products that we do not produce.

In analyzing the growth and development of factory centers it would seem that there are several underlying factors which determine to a certain degree whether or not factories can be established successfully. First, a great abundance of raw product or the possibility of producing the raw products in large quantities; second, a progressive citizenship, one keen and alert to see the possibilities and to pin their faith in the development of the industries; third, priority in becoming established in the field, and fourth, such items as cheap power, abundance of labor, good transportation facilities, etc. I wish to dwell a few moments on some of these points. Many of our large factory enterprises in this country are developed where there is a large production of the raw material. This is true of much of the iron and steel works, and true of some of the animal-packing works. It goes without question that we either have plenty of raw products here on the Coast or else have the land for obtaining such raw products in great abundance.

Progressive citizenship has proved to be a great item at times. Take the case of Belfast, Ireland. I heard it recently stated that Belfast was one of the greatest linen manufacturing centers in the world, one of the greatest shipbuilding centers, a great center for iron manufacturing, a great center for the manufacturing of tobacco products. Yet there is very little tobacco grown in Ireland, the linen that is used in the factories comes from Russia, the flax is mostly imported from Russia, there is practically little or no timber or mining products in Ireland, and yet this City of Belfast has become an industrial center for these materials. A progressive citizenship, alert to their possibilities, are undoubtedly responsible for much of this development. Take the canned corn situation in this country. The State of Maine commands the best prices for this product. Maine, with its rocky soil and short season. A

state that had to overcome most unfavorable conditions now leads the Union in the production of sweet corn for canning. Perseverance and progressiveness on the part of its people enabled them to find and develop a corn which had superior qualities. Priority in establishment is a wonderful factor. Undoubtedly much of the wonderful commercial development of New England and parts of the Eastern States was not due so much to natural resources as it was to the priority in the field, getting established and getting the business built up before their competitors got started. Abundance of labor can be obtained here easily enough if we have the factory possibilities. The opening of the Panama Canal should give us cheap transportation for such labor. It is said that we are one of the most fortunate states in the Union in the wonderful water power we have. This water power can be converted into cheap power for turning the wheels of many factories.

Considering the special topic that I am interested in, namely, by-products of fruits, I wish to call your attention to some work that is already being done on the Pacific Coast. Take California alone, for example. This past year the canned fruit and vegetable output of the State of California amounted to 7,623,395 cases. Many of these cases were of gallon cans. This is an increase of about one million cases over last year, which in turn showed a considerable increase over 1910. What a wonderful business this is. And California is building up a world-wide reputation in its canned products. I recently had the oppor-

tunity of looking over some statistics on the use of fruit by-products in Europe and other countries and I find that California is coming rapidly to the front as one of the chief sources of fine canned fruits and vegetables. Take our own case. We have an abundance of cheap land and can produce products here in enormous quantities. You all know the wonderful success of the cannery at Puyallup. It has been stated that the association at that point will handle in the near future in the neighborhood of \$1,000,000 worth of products annually. Take our association at Eugene. A recent newspaper clipping states that they did \$175,000 worth of business this past year. Our fruit union at Salem did a business amounting to \$262,000 this past year. Then there are other canneries. This one at Corvallis, the work of which will be handled by Mr. Tinker, is an example of possibilities. If we should develop as California has developed and be able to increase our output one hundred times, building up our markets as the output increased, what a boon it would mean to this State of Oregon. It would mean a big pay roll in all our towns; it would mean prosperous farmers; it would mean that we would get millions of dollars from our lands that it would be impossible to make in any other way. Furthermore, we will be producing products which will go to the world's markets, and therefore give us world-wide advertising.

From what has already been done it would seem that it is possible to successfully build up by-products plants. There are some problems, however, which those interested in such plants



Bridge Grafted Jonathan, Showing Treatment  
Freshly girdled stem; dead stem left for support, and with dead stem removed  
L5 Orchard, Winthrop, Methow Valley, Washington



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have to face, and I wish to call your attention to a few of these. They are, namely, capital, production and credit. These are closely interlinked. It has been very hard in the past to raise capital. The banks had very little confidence in the canning factories, evaporators, etc., and have refused in most cases to advance capital. Business men have been very loath to help the farmers to get these plants established. The farmers and producers themselves have had to work co-operatively, have had to stand together, to raise their capital.

But they are very much handicapped because it is impossible to raise all the capital desired to build the needed warehouses and suitable buildings and to get machinery which will enable them to operate their factories most economically and enable them to compete with other factories. They need plenty of money for a working capital. I believe that, as far as the canning factories and other horticultural by-products plants are concerned, the business men and commercial clubs and similar organizations of this state should take it upon themselves to assist these various factories in securing such capital, that they can carry on the business economically and successfully. Without this co-operation the development must be painfully slow. It is also to be remembered that there are reported certain agencies in the field that would gladly choke to death these infant industries. It is only by financial support that some of these industries can weather the storm. Then the men who have the money to invest in a cannery do not want to invest because, they say, "You do not have the product to handle," and the people do not raise it because, they say, "We do not have the factory to handle the product." Each one retards the other. We are in a transition period here in Oregon between the fresh fruit sales and the by-products. We have too much of certain grades to sell to advantage fresh, but we do not have enough of certain types to enable the canneries and other by-products plants to work to the best advantage. The farmers and business men have got to work together to utilize these grades of fruits. Berries, vegetables, tree fruit of various kinds should be planted in such quantities and of such varieties that the canneries can be run over as long a period as possible.

We have got to get away from the idea that the by-products plants are simply intended to use low-grade material. While certain types of plants, such as vinegar works, jelly factories, etc., can utilize certain low grades, if the canneries are furnished with the high grades of fruit they will be able to make a much higher grade of product and will be able to compete successfully with other institutions of the same type. We can grow good produce in as great an abundance and of as great variety and cheaper than any other section of this country. Then there is the subject of credit, not only in getting the initial capital but in getting an abundance of working capital, of being able to borrow money as other lines of business can borrow it. I think that with plenty of initial capital and with an abundance of raw product to work upon that the securing of credit will come more easily. I could dwell at some length here on what I believe are some of the other points on which success or failure depends in the cannery business, but I do not wish to take the time now to bring out what these points are, as I believe it is not necessary so to do.

I want to call your attention, however, to one great problem, which is that of securing efficient managers and capable processors. Were you to ask me today where it would be possible for me to hire five good managers for such plants, or a dozen processors, I would not be able to tell you where to go. We have to train such men. Some will get their training in the present factories that are already established, but these factories are not going to be able to meet the demand for trained men. I believe it will devolve upon the Agricultural College to give such training in business management, economics, chemistry, bacteriology and horticulture as will enable such men to secure the desired training, and thus we will be enabled to help meet the demand.

We are hoping to make a beginning on this work this coming year, but before we can develop very far from the horticultural side it is going to be necessary to have special buildings, equipped with certain special machinery and apparatus, in order that we can teach this work under actual commercial conditions. I have great confidence in the wonderful development here in the Northwest. I have great confidence in the people of Oregon, in the business men and commercial clubs, and I feel satisfied that they are going to give the matter their hearty co-operation so that we can develop a by-products business in this state that is not surpassed by any other state in the Union.

The "ABC-XYZ Bee Culture" is a very instructive and interesting book on bees, and one that ought to be valuable to the fruitgrower who believes in keeping bees, not only for the honey but for pollinization in the orchard. This book is published by A. I. Root Company and can be obtained from their house at Medina, Ohio, or 58 Fulton Street, San Francisco. Price \$2.00.

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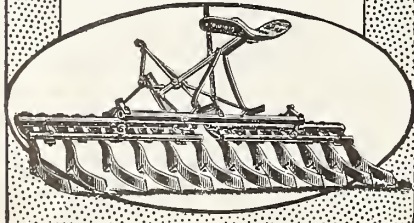
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years, after a very severe winter which one would suppose would surely be fatal to any eggs, and in spite of the lime-sulphur spray, a large crop of aphids should appear in the spring. There will have been years, too, when in spite of a thorough spraying with nicotine and the consequent killing of every aphid the latter will have appeared again in a short time as numerous as ever. The statement appeared in the papers last fall that the fruit crop in England had suffered severely through aphids "in spite of all the spraying." Now all this is easily explained if we assume that the eggs of the aphids were kept in the ground during the winter and carried to the trees in the spring by the ants.

It occurred to the writer when reading the article by Professor Wheeler that some idea of the amount of infection due to ants could be obtained, and this source of infection prevented, by making the tree inaccessible to the ant. Accordingly last spring all the cherry trees and apple trees in the orchard, and many of the peach trees, were banded with tree tanglefoot, and the results obtained tended to show, if not to conclusively prove, that the entire infection was due to the ant. The results were most marked in the case of the cherry trees, which have been every year without exception for several years past badly infested with black aphids, and which, owing to their great size and nearness to buildings, could not be sprayed satisfactorily. There was not a single aphid to be found on any of these trees (ten in number) except in the case of four branches which had bent over with the growth of leaves until their ends were in contact with the ground, thus giving the ant means of access to the tree and fortunately providing a "control" which

## The Relation Between the Ants and the Aphides

By W. Tavenor, Ashland, Oregon

IN none of the bulletins dealing with plant lice issued by the experiment stations or the Bureau of Entomology at Washington, D. C., does there appear to be any reference to the rôle played by certain species of ants in the economy of aphid life. This is the more remarkable since the facts, which have been well known to naturalists for some years, chiefly through the labors of Professor William Morton Wheeler of Harvard University, have an obvious bearing on the matter of aphid control. Professor Wheeler, who is the leading authority on ants in this country, had the following to say in an article on "Ants and Their Resemblance to Man," which appeared in the Geographic Magazine for September, 1912: "One of the earliest departures from an exclusively animal diet is seen among the ants which attend plant lice and feed on their saccharine excrement. \* \* \* Many ants are so inordinately fond of this food that they not only acquire an intimate acquaintance with the habits of the adult plant lice and scale insects,

but actually collect and store their eggs in the nests during the winter, in order that they may during the ensuing spring distribute the hatching young over the roots or foliage of the plants. This is a well developed habit among the species of *Lasius* common throughout temperate North America and Eurasia."

To the orchardist who has had much experience fighting aphids there will be no difficulty about believing the above statements, extraordinary as they are. For if he be a close observer he will certainly have frequently noticed the activity of the ants on the trees previous to the outbreak of the infection. He will probably have noticed also that a tree which harbored a colony of ants was more likely to be aphid infested than others. He will have read in the bulletins that the winter is passed in the egg stage, that the eggs are laid on the tree and there pass the winter, hatching out in the spring; and also that the lime-sulphur spray kills the eggs. If this be so, he will have wondered how it was that in some



Jonathan Three Years After Bridge Grafting  
Girdled stem removed. December, 1913  
15 Orchard, Winthrop, Methow Valley  
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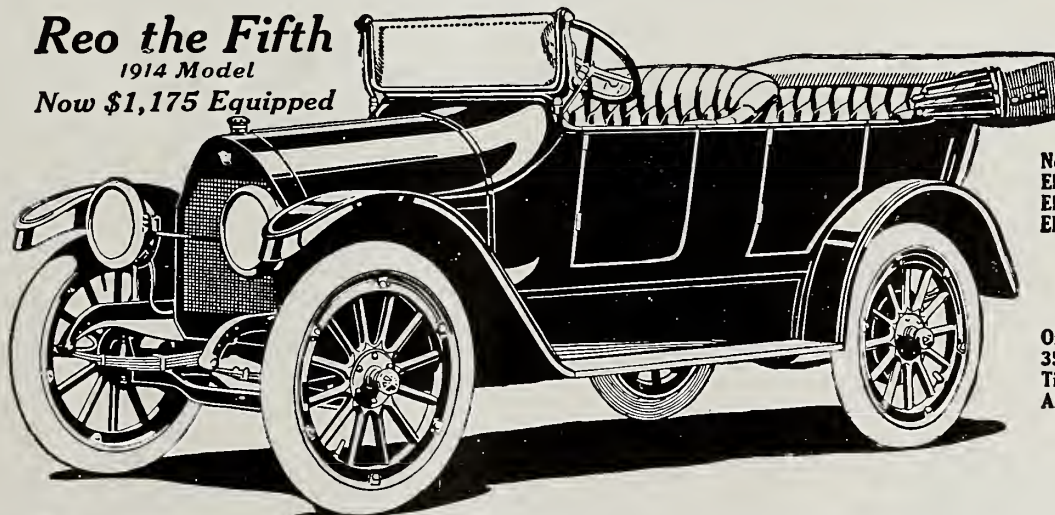
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demonstrated that but for the banding of the trees infection would have proceeded as in previous years. For the first time since the apple aphid was found in the orchard nine or ten years ago the apple trees were entirely free from all traces of aphid. The peach trees yielded similar results. While many unprotected trees had aphid on them, there was not one to be found on any of the protected trees. There were several instances where a shoot leaving the tree below the band was a mass of ants and aphid and the main tree quite clean.

All this of course did not prove that the ants were the cause of the infection: it might conceivably have been the case that the adult aphid wintered in the ground and climbed the tree in the spring. There was, how-

ever, ample evidence that this was not the case, for soon after the ants, after much persevering effort, had managed to struggle across the tanglefoot, owing to the latter having gathered bits of leaves, etc., thus providing stepping stones, so to speak, specimens of young aphid were found on twigs above the band. It was certainly not possible for any small, soft-bodied insect to cross the tanglefoot, and, in fact, a close observation of the bands failed to disclose any attempt to cross it by other insects than the ants, which latter were there in considerable numbers.

It is, of course, necessary to be cautious in drawing inferences from results obtained in one particular orchard during one season only, but it is safe to assume that the ant plays a much more important part in causing aphid trouble

than is commonly supposed, and is a factor which will have to be taken into account if we would rid our orchards of this troublesome pest.

The fruitgrower and farmer is a long way from the fire department. When a fire breaks out on the farm the result is apt to be a total loss, therefore fruitgrowers and farmers should protect themselves in the best possible way. First, buildings should be so arranged and located sufficiently far from each other so as to prevent the danger of one catching fire from another. Many fires originate from sparks. This suggests the advisability of the farmer using fireproof roofing on the house and other buildings which might catch fire from sparks coming out of the chimney.



## The Consumers' Apple—When Ready for Use

By W. S. Thornber, Lewiston, Idaho

**D**URING the past ten or twelve years the growers' problems in apple culture have been emphasized far in excess of all other problems together, and it is not surprising today to have the consumers come back at the growers with the request, "When are your varieties ready to use and to what use are they best adapted?" The consumers are beginning to realize that an apple requires more than color and size to make it an excellent dessert or even good cooking apple, and while a grade commonly known as cooking apples is frequently offered for sale, unless a consumer is sufficiently familiar with varieties so as to be able to separate them into even cookers, it is unsafe to buy mixed varieties even for cooking purposes. Apples are very much like potatoes, some varieties are better adapted for one kind of cooking than for another, and while it is possible to use certain varieties together and improve the flavor of the sauce it is usually unsafe. Very few varieties are perfectly adapted to all purposes at the same time, and most varieties have a very short dessert season. It is very unfortunate that so many apples are used out of their proper season. To get the best there is in eating apples they must be in their prime of condition and not overripe or too hard to enjoy.

The following table of varieties, month to be used and best uses will help those not familiar with flavors and conditions to more intelligently select their apples for home use:

Variety	Season	Condition	Dessert	Sauce	Baking
Yellow Transparent .....	Aug. to Sept.	{ Unripe } Ripe	Good Excellent	Excellent Good	Poor Poor
Duchess .....	Aug. to Oct.	{ Unripe } Ripe	Poor Excellent	Excellent Good	Poor Good
McIntosh Red .....	Sept. to Oct.	{ Unripe } Ripe	Good Excellent	Excellent Good	Good Poor
Wealthy .....	Sept. to Oct.	{ Unripe } Ripe	Poor Excellent	Excellent Excellent	Excellent Good
Winter Banana .....	Oct. to Dec.	{ Unripe } Ripe	Good Excellent	Poor Poor	Poor Poor
Delicious .....	Oct. to Nov.	{ Unripe } Ripe	Good Excellent	Good Poor	Poor Poor
Jonathan .....	Nov. to Dec.	{ Unripe } Ripe	Good Excellent	Excellent Good	Good Poor
Grimes Golden .....	Nov. to Feb.	{ Unripe } Ripe	Poor Excellent	Excellent Good	Good Poor
Stayman .....	Dec. to Feb.	{ Unripe } Ripe	Poor Excellent	Excellent Good	Good Poor
Spitzenberg .....	Dec. to Jan.	{ Unripe } Ripe	Good Excellent	Excellent Excellent	Excellent Good
White Winter Pearmain .....	Dec. to Mar.	{ Unripe } Ripe	Poor Excellent	Good Poor	Good Poor
Rome Beauty .....	Dec. to Apr.	{ Unripe } Ripe	Poor Good	Excellent Good	Excellent Good
Yellow Newtown .....	Feb. to May	{ Unripe } Ripe	Good Excellent	Excellent Excellent	Excellent Good
Winesap (common) .....	Feb. to Apr.	{ Unripe } Ripe	Good Excellent	Excellent Good	Good Good
Wagener .....	Feb. to May	{ Unripe } Ripe	Poor Good	Excellent Good	Excellent Poor
Arkansas Black .....	Feb. to May	{ Unripe } Ripe	Poor Poor	Excellent Poor	Excellent Good
Ben Davis .....	Feb. to May	{ Unripe } Ripe	Poor Poor	Good Poor	Good Poor

There is no definite season for the same variety from all districts. The altitude, temperature and soil upon which a variety grows influences the season of maturing very materially. For example, a Jonathan grown in a low, warm valley on sandy soil will

be passed its prime before December first, while one from a higher altitude on clay loam may be at its best for the holiday trade. Another factor rarely taken into consideration is that long before an apple is ready for use as a dessert fruit it may be at its best for cooking and baking purposes, and after it is ripe enough for dessert uses it may be too ripe for the best cooking uses. Occasionally consumers say to me, "We can no longer get the nice, rich, juicy apples from our grocers we used to." The difficulty is that too many groccerymen fail to recognize the fact that practically all varieties have a best season and they overstock with certain varieties or are unable to estimate their needs for certain periods of the season, and one of two things happen, either the variety passes out of season on their hands or takes up unfavorable flavors from poor storage. Apples are very much like butter in this respect and should never be stored with vegetables, groceries, or for that matter in a poorly ventilated storeroom. If a consumer is limited to one or two varieties of apples for all purposes he will be best satisfied with such varieties as Jonathan for early winter use, Rome Beauty for mid-winter use and Yellow Newtown for later winter and early spring use. However, it would be more satisfactory to put in a few of the extra quality dessert apples like the McIntosh Red, Winter Banana, Delicious, Spitzenberg, White Winter Pearmain and Grimes Golden for special table purposes.

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poses, is an excellent baker until it becomes overripe very late in the season. Some housewives are very partial to a rich, yellow sauce. This is possible only with such varieties as the Spitzenberg. Others like a brisk acid sauce, which can only be secured from the unripe Northern Spy or by adding lemon to the sauce, which usually improves it under most conditions, and especially so when made from overripe apples. The size of the apple, although well grown, influences the quality with such varieties as Delicious, Rome Beauty, Winesap, Arkansas and Ben Davis. Small-sized Delicious, Arkansas and Ben Davis are as a rule inferior in quality, while the large-sized Rome Beauty is particularly superior for baking purposes. There is no comparison between the medium to large-sized Delicious and small apples of the same variety. The large ones have a rich, aromatic flavor, while the small ones of this variety are poor. With few exceptions the medium-sized apple is superior in every way. The Winesap and Jonathan are frequently too small to be considered first-class baking apples. The flavor is good, but loses much in baking.

The Kennewick Fruit Exchange, located at Kennewick, announces it has been incorporated with a capital of \$25,000, with the following list of officers: W. H. Allison, president; W. G. King, vice-president; W. R. Crawford, secretary; M. W. Matthecheck, treasurer, and Charles H. Collins, general sales manager. They will adopt the big letter brand and use a big "K" on the labels.

It is not generally known that the large-sized Rome Beauty apple makes excellent bakers and now are becoming extensively used by the best cafes and hotels for that purpose. The Arkansas Black, a beautiful apple of extremely poor quality for dessert pur-



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**Co-operative Canneries.**—At different times in the past canneries have been established in different sections of the Northwest, either on the co-operative plan or by private concerns. It is true that some of these have been failures. The failure was principally due to the lack of knowledge about the canning business, lack of capital, or to the fact that the conditions did not justify the erection of a cannery. In some instances there has not been a sufficient variety of product to run a cannery for a continuous period. A sufficient length of season is necessary for the success of every cannery. Co-operative canneries are commanding the attention of the fruit growers of the Northwest and are being investigated with keen interest. There are three co-operative canneries (perhaps there may be more) that stand out as being phenomenal examples of great achievement: the Benton County cannery at Corvallis, Oregon; the Eugene Fruit Growers' cannery, and the Puyallup Berry Growers' cannery. The Benton County cannery is mentioned first for the reason that it was established under the most difficult conditions and has met them successfully. The story of the organization, operation, the success and the achievements of the co-operative cannery of the Benton County Fruit Growers is ably told in the leading article of this issue by George Tinker, the manager. The story is very thorough and very comprehensive. It is one which should be read by fruit growers in every district where they feel there is need for a cannery. The Benton County cannery and the cannery at Eugene have taken advanced steps in the cannery business which have never been attempted in the Northwest by

any other canneries, so far as is generally known. By experience they ascertained what varieties of fruits and vegetables they could put up successfully. By that is meant what varieties they could put up which would have the quality to command a sale and their ability to put them up and sell them in competition with the products of other institutions. After doing this, the next step was to so regulate the acreage of the fruits, more particularly the small fruits and the vegetables, so as to have a continuous supply for canning, keeping the cannery in operation during the entire season. All of this is more ably told in the article, and therefore editorially it seems unnecessary to make further comment.

**Utilization of By-Products.**—This industry is a vital problem for consideration by the fruit grower in the Northwest and one which should receive attention from everyone. As a matter of fact, we have been prodigal and have never taken any steps to save the waste, yet it is a well known fact in the meat industry that almost the entire profit is made by saving all of the waste. It is not to be inferred that saving the waste in the fruit business will be the sole profit, but it will certainly be much money saved to every fruit grower if this waste is converted into by-products. There are probably not five per cent of the fruit growers who know anything about the by-product industry, or what could be made into by-products, or what these by-products would be. The fruit grower should educate himself along this line, and as soon as the fruit growers become informed as to the value of by-products, their manufacture, etc., then the organization of by-product manufactures will follow. With this view in mind we refer our readers to the article in this number entitled "The Problem of Utilization of By-Products," by Professor C. I. Lewis.

**Marketing Apples.**—This probably is the biggest, broadest and most vital problem of the fruit industry of the Northwest at the present time. "Better Fruit" has published in the past a number of articles on marketing and distribution. The fact of the matter is, we all need information and education along this line. Therefore some excellent articles are contained in this issue in regard to marketing, also on co-operation and financing. They are articles which every fruit grower should read.

**Apple Advertisers of America.**—The apple industry seems to be waking up, not only to the necessity of better marketing methods, wider distribution, etc., but the importance of creating a larger consumption by advertising the apple. Few people appreciate the value of advertising or realize the magnitude of business the right kind of advertising can create. The apple growers seem to have awakened to the importance of advertising the apple and much credit is due to the International Apple Ship-

pers' Association, which appointed a committee for this purpose, and the efforts of the chairman of this committee, Mr. U. Grant Border of Baltimore, which have resulted in an organization called the "Apple Advertisers of America," with the following set of officers: Mr. Louis Erb, president; Mr. E. P. Cohill, first vice president; Mr. Gibson, second vice president; Mr. Tyson, treasurer; Mr. U. Grant Border, secretary. These gentlemen will conduct a vigorous campaign and formulate a plan for securing funds for the purpose of extensively advertising the apple, with a view to increasing its consumption and creating a greater demand.

**Home Gardening.**—Every fruit grower and farmer should read the excellent article by Professor Bouquet on "Home Garden Making" in this edition. Apparently few fruit growers, in fact, few farmers, appreciate the luxury of a home garden and perhaps less appreciate its economic value. By actual calculation it has been determined that the vegetables which a family of five will eat in one season will cost at the store \$105, and this does not include winter vegetables. Therefore it is evident that any farmer or fruit grower who is willing to do a little extra work evenings or at odd times can supply his table with vegetables without any cost other than the seed, which will not exceed \$5, and thus receive as an income in the way of supplies for his table vegetables to the value of \$100.

## Control the Cutworms

Young plants that are just pushing through the ground are often attacked by sleek, well-fed, greasy, sparsely-haired cutworm caterpillars. The plants are found to have been cut off near the surface of the ground, with the wilted tops lying near. These worms are capable of doing a vast amount of damage from the fact that they merely mow down the plants, thus destroying many times the plant substance that they consume. Late summer or fall or early spring plowing, followed by frequent harrowing where practicable, is very effective in controlling cutworms. By thus keeping down all the vegetation the worms are starved out.

After the crops have started growing the standard remedy for cutworms, according to Professor A. L. Lovett, Oregon Agricultural College specialist in garden and field pests, is the poison bran mash. The mash is prepared as follows: Coarse bran, 16 pounds; paris green,  $\frac{1}{2}$  pound; salt,  $\frac{1}{4}$  pound; cheap syrup, 1 quart; warm water to make a coarse, crumbly mash. Be sure not to get the material sloppy; it should fall apart readily in the hand after being pressed together. Small heaps of the mash may be placed about the young plants. If the cutworms are working in from one side of the field the mash may be scattered or drilled at right angles to their line of attack. It is best to scatter it in the evening so that it



will be moist for a longer time. Chickens should not be allowed free range on a treated field.

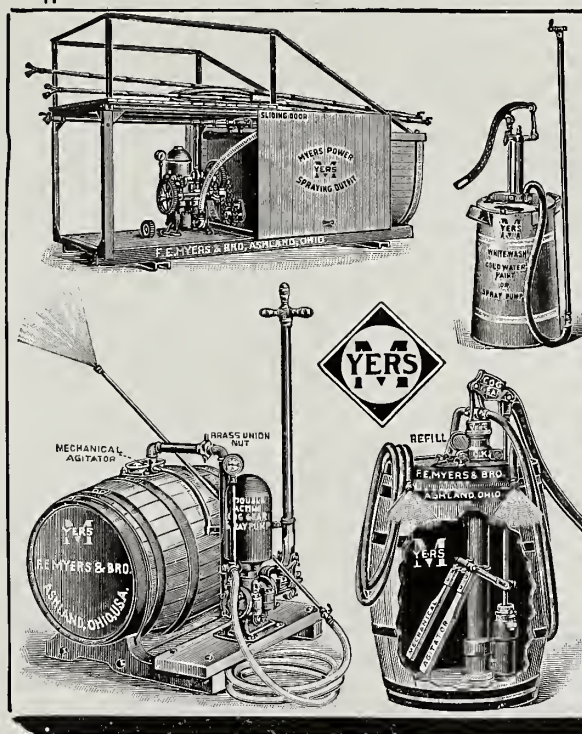
Frequent stirrings of the soil will expose many of the worms. They may also be rendered less harmful by pressing stiff cylinders of paper or tin down into the soil about the plants, allowing them to project about two inches above the ground. Because of their large numbers, cutworms have invited the attack of many natural enemies. Poultry and several types of birds, including the robin, catbird, blackbird and quail, feed on cutworms. Toads feed on these worms and should be encouraged and protected rather than destroyed. Spiders and wasps also prey on cutworms. The majority of mottled gray and brown moths that are attracted to lights are the adults of cutworms. Cutworms pass the winters as eggs, pupa, adult moths or as half-grown cutworms in the soil. The last named is a type most injurious in Oregon.—Contributed.

Professor H. V. Tarter of the Oregon Agricultural Chemical Department reports that the value of ashes as a fertilizer is about five dollars per ton. A strawberry grower of Hood River, who has always produced excellent berries and splendid crops, saved all of his ashes, which he utilized in fertilizing his strawberry bed. The farmer should not waste any. Every fruitgrower should endeavor to not only maintain the fertility of the soil but to enrich it. There are many kinds of fertilizer which can be purchased and which are very beneficial. Among these may be mentioned animal fertilizer, manufactured by different meat companies; chemical fertilizers, phosphates, potash and nitrate of soda. Fruitgrowers should utilize all of their ashes and all of the manure. They are splendid fertilizers. They should purchase such commercial fertilizers as are best suited to their needs and apply them in an intelligent way in the right quantities and at the right time. It must be remembered, however, that commercial fertilizers can only be expected to yield the proper returns when there is a sufficient supply of humus. Humus can be supplied either by cover crops or barnyard manures.

Now that the fruitgrowers are taking a great deal of interest in dairying as a diversity line, it seems proper that attention should be called to the fact that the feed of cows largely influences the flavor of the milk. The Department of Agriculture has issued a circular stating that oats, corn, alfalfa, hay, cottonseed meal, linseed meal, bran and gluten for dairy cows, when properly fed in reasonable amounts, produce a fine flavored milk, but no substantial evidence that any one is superior to any of the others in this respect. Relative prices of the different feeds, of course, in a large measure will determine in most cases which are to be preferred in making the rations for dairy cows.

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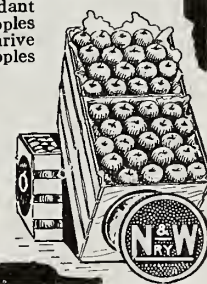
## Virginia—the Fruit Grower's Paradise

Climate and soil are both particularly favorable. There are seldom late frosts or high winds. Blizzards and cyclones are unknown. The rainfall is abundant and well distributed—average 4 inches monthly in 1913. Virginia apples are the tastiest on earth and many other large and small fruits thrive equally well. Many Virginia fruit-growers are making fortunes—apples alone often netting as much as \$500 an acre.

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Required by the Act of August 24, 1912.

Note: This statement is to be made in duplicate, both copies to be delivered by the publisher to the postmaster, who will send one copy to the Third Assistant Postmaster General (Division of Classification), Washington, D. C., and retain the other in the files of the post office.

Editor, E. H. Shepard. Post office address, Hood River, Oregon.

Managing Editor, E. H. Shepard.

Business Manager, E. H. Shepard.

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Average number of copies of this publication sold or distributed through the mails or otherwise, to paid subscribers during the six months preceding the date of this statement: (This information is required from daily newspapers only.)

E. H. SHEPARD, Editor and Publisher.

Sworn to and subscribed before me this 25th day of March, 1914.

(Signed)

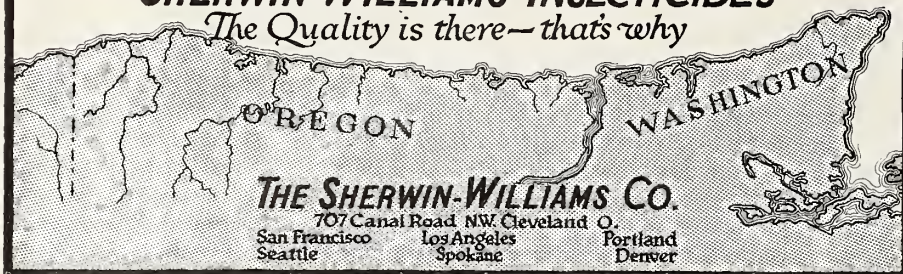
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## Some By-Products—Dried Apples

By J. O. Holt, Manager Eugene Fruit Growers' Association

WITH the coming of cheaper transportation we should be able to dry and market a large percentage of our cheaper grades of apples profitably. A dryer suitable for prunes and loganberries can be used for this purpose. Well galvanized iron trays should be used, and they must be free from prune and berry juice. Some machinery will be needed to do the work economically. A battery of from four to six peelers and from twelve to twenty trimmers would make a very effective crew, which could turn out from 1,800 to 3,000 pounds of the dried product a day. The cost of operation would be between two and three cents for the dried fruit. The culls and peelings can either be dried and sold as chops and waste or transferred to the vinegar department. The fruit must be kept constantly on the move from the peelers until it leaves the dryer. Use as little sulphur as possible to get a good, light product. The fruit is usually packed for market in fifty-pound boxes, the top layer being faced.

About 95 per cent of a ripe apple is juice, and this juice carries almost all of the food and medicinal value of the apple. A modern cider press will extract 60 to 65 per cent of this juice, or something like four gallons to the bushel. In this way practically all the values of the high-class apple can be obtained from what would otherwise be wasted. Enough apples go to waste in a normal season here in the Willamette Valley which if made into vinegar would supply the ordinary wants of the whole state for perhaps five years. Yet I think we should be prepared to supply our own people with all the pure cider vinegar they can use. I do not believe that a plant for the manufacture of vinegar alone will ordinarily be found profitable. What we should do is to cultivate a demand for sweet cider, not only during the fall months but the whole year around. By properly sterilizing and storing, cider can be kept sweet and its natural aroma retained for several months. Our press has a capacity of something

like 3,000 gallons per day, or 1,000 bushels of apples. The cider is immediately pumped into tanks holding from 1,000 to 2,500 gallons each.

The cider should be tested while sweet to ascertain the amount of sugar in the juice, for the grade of vinegar produced will depend on its sugar content. A balling hydrometer reading to fifteen degrees will give fairly accurate results. Good cider will test from twelve to fourteen degrees when sweet, and figuring on a normal loss in generating, should make from forty-five to sixty-grain vinegar. Alcoholic fermentation immediately sets in and should be completed in from one to two months, depending on temperature. At this point the hydrometer will read about zero. The next process is to change the alcohol to acetic acid. This is a more complicated process; a generator is often a very contrary thing. It consists of a tank some five feet in diameter and seven to ten feet high, usually filled with beech shavings, over which the “waste,” as it is now called, trickles, exposing it to the air. Before starting the generator is aciduated with some good cider vinegar of approximately the same strength that we are expecting to make from the stock on hand. An ordinary generator should produce about thirty-six gallons of vinegar each twenty-four hours. The generating of vinegar produces heat and care must be taken that this does not rise above ninety degrees. Generators will sometimes slime, usually near the top, and if not cleaned will soon stop working. It will then be necessary to remove the shavings, steam, wash and dry them and start over again. The national pure food law requires cider vinegar to test not less than forty-five before being offered for sale. This makes an excellent standard to follow. I understand vinegar testing as low as forty grains may be offered for sale in this state. A large percentage of the vinegar made in the ordinary way in the orchards is very poor. I have examined vinegar offered for sale by farmers as a first-class article and found it to test only twenty or twenty-

## WANTED!

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## The Question of the Day

With the fruitgrower is, how can he derive a revenue from his overripe and unsalable fruits?

It can be done. It is being done. How? By the use of the new and up-to-date process of

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five grains. A chemist is a handy man around a vinegar plant. We have had valuable aid from the chemical department at the university.

The kraut and pickle business combine very nicely with the vinegar factory. Each passes through a fermentation in its own way and each requires careful attention. The cucumbers are graded and put into vats and covered with brine to cure. Cauliflower, dill, etc., are cured in very much the same way. Putting up pickles, especially dill pickles, in tin cans is rather a recent departure, but during the past season several cars were sold in Portland alone. Cabbage intended for kraut is cored and cut by revolving knives run by power. It is then packed in barrels or tanks with the proper amount of salt, where it goes through the fermentation in from two to six weeks, depending on temperature and the amount of salt used. We can all our kraut and find a ready market for it, both in the gallon cans and the number 3s, as the quart can is called. Consumption of canned kraut, as well as pickles, is increasing rapidly. A can furnishes the proper amount for a family meal; it is clean and fresh, in striking contrast with the open barrel at the grocery store with its swarm of flies and disagreeable odors. The perfection of the sanitary enamel-lined can has made possible the canning of these rather acid foods. The enamel lining on the inside of the can prevents the contents from coming in contact with the tin. To these activities we hope to add, as soon as we are able, the manufacture of the various fruit juices, syrups and other soda-fountain necessities, crystalized and candied fruits, jellies, jams and preserves, fruit butters, etc. We expect to approach each new departure cautiously. No doubt some of them, perhaps many of them, will not prove profitable.

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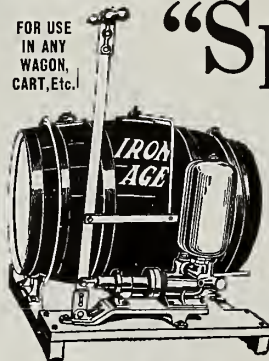
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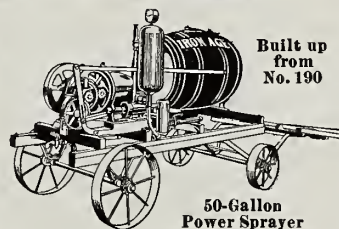
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## The Future of Fruit Growing

By Dick Dickinson, Eureka, Montana

THE fruitgrower is now where the farmer was fifteen or twenty years ago. At that time, with corn, wheat and beef worth scarcely enough to pay for marketing them, the farmer was playing in hard luck. That the rise in the price of his products would in a few years bring about a nation-wide protest against the high cost of living and their scarcity would lead to investigations into the problem of feeding the people was then inconceivable. Yet that very thing has happened, and the farmer who hung onto his farm during those trying years is now better off than nine-tenths of the people whom he used to envy.

The former low ebb of farming resulted largely from the opening of the West to cultivation. An era of railroad

construction and a great tide of immigration accelerated the movement. Those, too, were days of crude farming. No one thought of raising anything but the standard cereals and animals. It was inevitable that the market should be surfeited. What the railroads and immigration did to the vast prairies, the real estate agents and other influences did a little later to the available fruit land of the United States. Every mountain pocket, frost-protected valley, natural fruit region was discovered, surveyed into plots and exploited.

Fruit was then worth a fair price. The demand was increasing because the population had collected in large manufacturing centers and the standard of living had reached a high point.

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The use of refrigerator cars and other facilities for handling perishable fruit also had their effect. The real estate agent reaped a harvest, for it was easy to find dissatisfied farmers and other men to "fall" for the lure of big profits as set forth in highly-colored literature. But they have done their worst. There is very little virgin fruit land left to be exploited. It has been sold for a hundred to a thousand dollars per acre, much of it not one whit more fertile, nor even as near to market as the farm land of Iowa and Illinois. The price was paid because it would grow valuable fruit. But in spite of the high-priced acres those who got in on the ground floor did not early regret it.

The folder pictures of the apple tree that paid for the whole acre of ground were not always an exaggeration.

But it requires from three to eight years for trees to produce their fruit. The check between the supply and demand is not a see-saw between two successive years, but rather a cumbersome balance between supply from several years' planting and the demand of one year. Fruitgrowers planted in a scarcity but reaped in a general plenty. Before they realized it they had outrun the population. Under favorable conditions for the last number of years there has been such an overproduction each year that only by diligent co-operation in marketing have

fruit raisers been able to come out ahead. They have been rudely shocked out of their dreams of affluence, if they ever had any, by the serious problem of earning a living and paying for their tract of land. Under these unpromising conditions there have been fewer people than formerly ready to take up fruit growing, while others have plowed up their fruit patches or orchards or failed to replace the decrepit trees. And every one of them will regret it within the next five years.

We shall witness a repetition of the agricultural situation. Fruit is not only a food, depending for its demand upon the ever-increasing and hungry population, but it is also a semi-luxury that is capable of an enormously increased demand under favorable industrial conditions. The gradual increase in the population from year to year is considerable, as far as additional demand is concerned, when compared with general prosperity among the wage-earners that will enable them to eat fruit in great quantities. Yet in spite of this possibility it is safe to say that in the last few years the laying out of orchards has not even kept pace with the increase in population. The future supply is bound to fall short of the demand. Furthermore, the return of prosperity for the fruit raiser will be hastened by other causes than the relative curtailment of the supply and the increase of the demand, which were so important in the case of farm products. At present we are marketing and distributing perishable fruit by much the same methods as are employed for wheat, corn and beef. These inefficient means cannot long remain when for every pound of fruit which the grower must sell at a ruinous price there is a buyer willing to pay a good price, if only the two could be gotten closer together. The meeting of this condition amounts to the proverbial necessity which mothers all inventions.

When co-operation, improved and cheaper methods of transportation, more direct relations between producer and consumer, and the easing up of the high cost of necessities permits a greater expenditure by the people for the semi-luxuries, the fruit grower will come back to his own with a vengeance. The impossibility of making up a fruit shortage in one year will make the situation far more acute than we now realize. When the increased demand must wait three or four years to be

F. A. BISHOP, Secretary

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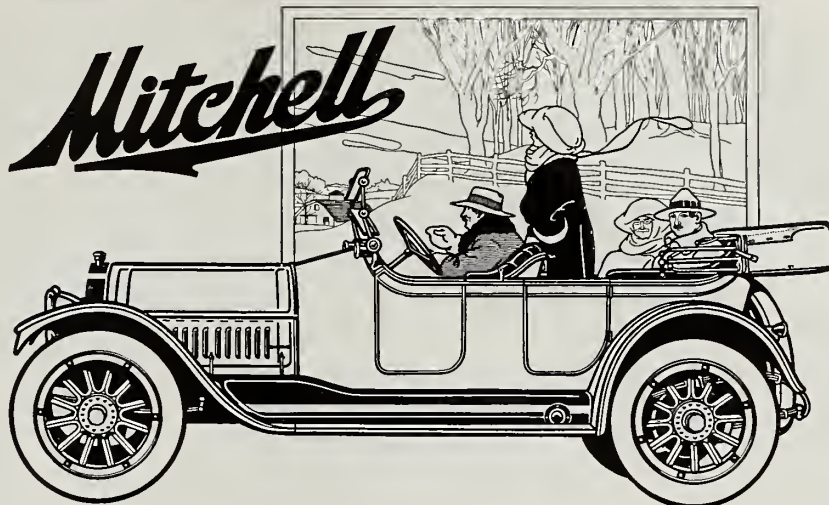


supplied each yearly crop is bound to bring handsome prices. Every fruit grower should realize this, hold onto his fruit land, keep his trees producing, in order to meet this tide of prosperity at its full.

### National Apple Show By-Products Committee Meets

The committee on by-products appointed at the Sixth National Apple Show held at Spokane, Washington, held its first meeting in the Commercial Club rooms, Walla Walla, Washington, December, 18-19, with the following seven members present: H. C. Sampson, W. H. Wicks, P. H. Weyrauch, J. H. Chapman, C. J. DaVise, M. J. Higley, J. F. Batchelder. Absent: R. E. Strahorn, Portland, Oregon; D. D. Olds, Wenatchee, Washington; H. M. Sloan, Florence, Montana; W. S. Brown, Corvallis, Oregon. Every member of the committee, present or absent, submitted a written report on the by-product plants of his district, and a discussion of many hours followed these reports. The committee finally and unanimously agreed that since only 10 per cent of all the by-product plants at present in the four Northwestern States have been successful, and since already the growers of these states have lost probably more than a quarter million of dollars in unwise investment in such plants, therefore growers should be warned against too hasty action in accepting the plausible tales of by-product promoters and should use much care, judgment and investigate before lending their support to promote by-product plants. The committee also agreed that as the present investment of more than \$200,000,000 in the fruit industry of these four states was probably a waste of 25 per cent, therefore prompt and definite action in the solution of the by-product problem should be made. In line with the two above conclusions the committee then agreed on the following scope of work to be done by the committee and divided itself into three sub-central committees to carry on its investigation and to report progress on or about March 1st at a meeting to be held at North Yakima.

Scope of Work.—(1) A preliminary survey, including an investigation covering the entire Northwest as to the following points: Number of co-operative and privately owned by-product plants; by whom owned; capital invested; stock or mutual associations; nature of plants, dryers, canneries, vinegar factories, etc.; output of finished product; results of operation, success or failure; varieties and quantities of products that can reasonably be expected to be available if proper by-products plants are established; class of by-product plants adapted to the different localities of the Northwest; amount of raw material taken care of. (2) To investigate, in connection with the proper authorities of the agricultural colleges and the authorities of the four Northwestern States, also in connection with the proper authorities



If the average Farmer is as shrewd a merchant as he is said to be—and we *know* he is—the fact explains why so many Mitchell cars are in *daily use on the farm*.

It is because the Mitchell is a sturdy and lasting proposition and may be maintained with maximum economy that the farmer finds it suited to his needs. When he buys it he realizes that he has made an investment which *pays big dividends in efficiency*.

The car that does the most work, lasts the longest and can be kept up with the least expense for repairs, is *the car that the Business Farmer needs* and this we declare to be the Mitchell because years of experience have *proved* it definitely.

The purpose of this advertisement is to request you Business Farmers to go at once to the nearest Mitchell dealer, examine the car carefully, take a ride in it and *drive it yourself* so as to get the *personal feel* and the *personal touch*. If it proves its merit it is the car you want. That's the *only way* to buy an automobile and the only real way to *sell* one.

#### Equipment of All the Mitchell Models That is Included in the List Prices

Electric self-starter and generator—electric lights—electric horn—electric magnetic exploring lamp—speedometer—Tungsten valves—mohair top and dust cover—Jiffy quick-action side curtains—quick-action rain vision wind-shield—demountable rims with one extra—double extra tire carriers—Bair bow holders—license plate bracket—pump, jack and complete set of tools.

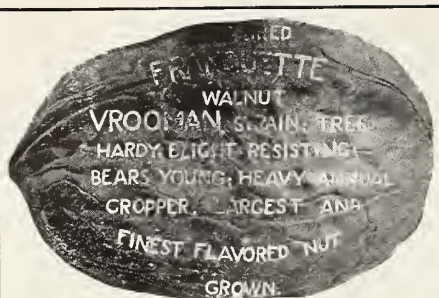
Prices F. O. B. Racine

*Mitchell-Lewis Motor Co.*  
**Racine, Wis, U. S. A.**

of the federal government, the quantity of by-products now manufactured within the United States, the quantity exported and the quantity imported; also the quantity imported into the four Northwestern States. (3) To investigate the various methods and machinery available in the production of the

different by-products at the present time. That any further action of this committee be determined by the results of this preliminary investigation. Commercial clubs and fruit organizations of the Northwest will be asked to co-operate in securing \$1,000 toward defraying preliminary expenses





## Vrooman Franquette Walnuts

A prominent doctor of Portland, writing us recently concerning Vrooman Franquette Walnuts, said: "I have asked several grocerymen what proportion of walnuts they sell as compared with other nuts, and the average is TWELVE TIMES AS MANY WALNUTS AS ALL OTHER NUTS COMBINED. People are beginning to know the food value of walnuts, and when they realize that ONE POUND OF WALNUTS LIKE THE VROOMAN FRANQUETTE CONTAINS AS MUCH NUTRIMENT AS THREE POUNDS OF BEEF OR MUTTON there will be more eaten and some of the high cost of living will be solved."

If you have room for some walnut trees, you will find them the best investment you ever made. Our trees are large, heavily rooted, healthy—first class. Why not order some trees at once and have them delivered for planting this spring. We have all varieties of other fruits also.

## Oregon Nursery Co.

ORENCO, OREGON

Reliable salesmen wanted.

## OREGON CLOVER SEED

The Finest Grown  
Anywhere

A complete stock of fancy grades and sold at the very lowest prices. Tell us how much you want and we will quote you by return mail.

Prompt Shipments

Special Low Prices on Vetch Seed

**D. A. White & Sons**  
SEEDSMEN  
Salem, Oregon

## BERRY PLANTS

BEST AND CHEAPEST

Illustrated Price List

**LOUIS F. SCRIBNER**

Department B Pasadena, California

## H. HARRIS & CO.

Fruit Auctioneers

227 State Street

Boston, Massachusetts

Established 1847

Frank Moseley

Frank L. Ripley

Cutler B. Downer

## Control of "Cherry Gummois"

The canker disease that causes most of the gummosis of young cherry trees is caused by organisms that live over winter in the edges of old cankers, especially in the large ones of the previous season's growth. "The cherry gummosis fight is on," says Professor H. P. Barss of the Plant Pathology Department, Oregon Agricultural College. "The disease starts out late in the winter, enlarging the old injuries and with still greater damage becoming a source of a multitude of new infections. The old cankers of last year should be cleaned up now and new infections should be watched for and treated as soon as discovered. The method is simple, but thoroughness is essential. With a drawknife or other instrument remove all the bark that is affected, being especially careful to cut out all the brownish and discolored bark at the outer edges of the cankers. Where there is evidence that the canker is actively spreading up or down the tree, one must cut well beyond the point where the bark shows discoloration in order to remove all infected substance. The wounds should then be washed with a 1 to 1,000 solution of corrosive sublimate to disinfect the surface. This is absolutely necessary. Get the tablets and directions for making right strength from your drug store, keep in glass can or bottle labeled poison, and apply it with sponge or wet cloth to the tree, wetting the cut surface well. A short time should be allowed for the surface to dry and, unless the wound is small, some good pruning paint, tree paint or paint made of pure white lead and raw (not boiled) linseed oil should be used to protect the exposed wood from the attacks of wound fungi and heart rots. All through the spring watch should be kept for newly-forming cankers and blighted spurs and buds. These should be cut out and disinfected at once. Do not depend on the exudation of gum to reveal new cankers. Bad cankers are sometimes formed with very little gum appearing externally. Watchfulness, persistency and thoroughness with this method will reduce materially the damage which the disease is now causing annually in the state. No other method of combating the disease in infected orchards has proved satisfactory in the experience of the Experiment Station. In planting new orchards, however, the serious phases of the disease may be avoided by growing resistant seedling stocks and grafting the commercial varieties into the limbs.

Recent investigation on the importation of seedlings from France have shown some infestation of the brown-tail moth, therefore it seems advisable to caution all nurserymen importing seedlings from France to have very careful inspection. While government inspection is supposed to be made very carefully, investigation, care and caution on the part of the nurseryman certainly seems advisable.

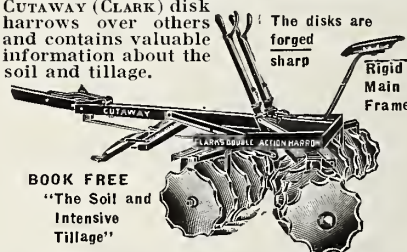


Are standard—the best to be had for money-making purposes. We are Agents for Lewis Bee Ware. Send for Catalog. Most authoritative Bee Book issued, 34 pages of definite information. Illustrated.

The Chas. H. Lilly Co. Seattle.

## Cutaway (CLARK)

disk harrows are especially popular among farmers who understand the soil and intensive tillage, and who appreciate the big difference in the value of disk harrows. They are made in styles and sizes to meet the requirements of every farmer, whether he uses a large tractor or one small horse for power. Ask your dealer to show you a CUTAWAY (CLARK). If he doesn't sell CUTAWAY (CLARK) harrows, write us. Don't accept a substitute. We ship direct where we have no agent. Send for catalog, "The Soil and Intensive Tillage." It shows the many advantages of CUTAWAY (CLARK) disk harrows over others and contains valuable information about the soil and tillage.



The Cutaway Harrow Company

Makers of the original  
CLARK disk harrows and plows

940 Main Street Higganum, Conn.

PORTLAND  
SEED  
COMPANY

WESTERN  
AGENTS  
A. I. ROOT CO.

## BEE HIVES and Supplies

IF YOU own an orchard or keep bees you should have a copy of our

1914 CATALOG  
of Bee Supplies

Listing everything necessary for the successful handling of bees and production of honey. Gives Valuable Information on Pollination. Tells How to Keep and Care for Bees.

Ask for Catalog No. 203

PORTLAND SEED  
COMPANY  
PORTLAND, OREGON







Trade Mark

# Buy "Corona Dry"

One pound of "Corona Dry" will do the work of three pounds of Paste Arsenate and do it better

## Imitated but not duplicated

But economy is not everything. Efficiency is more important. What would it mean to you to have a spray mixture of standard strength and be absolutely sure that all of one spraying or of many sprayings was absolutely the same strength? Evaporation, difficulty of perfect mixing, make this impossible with a paste arsenate. You can have a standard efficiency if you use *Corona Dry*.

### **Largest and most progressive growers have rendered the verdict**

A large practical usage in every section of the country has proved that "Corona Dry" is unequalled in efficiency or as "easy mixing." It does not freeze, dry out or cake; always retains its original strength. A perfect mixture, a perfect standard of unvarying strength is assured with

**"CORONA DRY"**  
Arsenate of Lead  
Patented June 30, 1913  
*The "Standard" for Convenience, Economy, Efficiency*

Quickly and easily mixed. No working up—no straining needed—no sediment. No lumps. No waste. Never clogs spray nozzle. Highest per cent. of actual killing power. Absolutely safe, will not burn. Sold in net weight packages: 200 lbs., 100 lbs., 50 lbs., 25 lbs., 5 lbs., 1 lb. No shrinkage, seepage, evaporation. Every package contains actual net weight of "Corona Dry" paid for.

Remember, "Corona Dry" means no guesswork, but a standardized spray in which the mixture is always the same strength and efficiency

Write for Booklet. Ask for Corona "Tree Insurance" Policy. Address

**CORONA CHEMICAL CO., Dept. E, Milwaukee, Wisconsin**

MANUFACTURERS OF

*Insecticides and Fungicides, Arsenate of Lead, Lime and Sulphur, Bordeaux Mixture, Paris Green, Etc.*

Distributing Agents { Boston, Mass.—Joseph Breck & Sons Corporation  
Philadelphia, Pa.—Pittsburgh Plate Glass Co.

Memphis, Tenn.—Hessig-Ellis Drug Co.  
New Orleans, La.—Finlay-Dicks & Co.

Spokane, Wash.—Spokane Seed Co.  
Portland, Ore.—Portland Seed Co.

**Northwestern Sales Agents Portland Seed Co., Portland, Oregon** Catalogs and prices on request

## The Canning of Fruit and Vegetables on the Farm

By W. H. Wicks, University of Idaho, Moscow, Idaho

**T**WO great problems that present themselves to the American people at this time are the conservation of our natural resources and the prevention of waste. Both have progressed quite definitely in some lines, but work yet needs to be done in the field of horticulture. The amount of waste which takes place annually throughout the fruit and vegetable-growing districts in the shape of spoiled fruit and vegetables is enormous. This loss is felt not only by the producer of such commodities, but it reacts upon the consumer as well. Our Western country is especially in need of the saving of fruit and vegetables. On most farms one can observe the wholesale waste of fruits and vegetables that could be turned into a profitable product if methods of preservation were worked out and practiced. In addition to the financial loss of such commodities to the grower and consumer, it gives a bad impression to the stranger visiting the Coast. As we all know our efforts in the past have been devoted to the production of the perfect apple. During this campaign very little attention has been paid to the by-product work or the smaller details of the industry. The

situation is rapidly changing, however, and in the near future the writer is of the opinion that by-products will equal, if not exceed, the revenue that is derived from fancy packed fresh fruit. Until all of the product that the tree or vine produces is saved our horticulture is not upon its most successful basis. The experience of other manufacturers in the use they make of their by-products is too well known to be repeated here. There is one point that I think we all agree upon, and that is all our fruits and vegetables need to be turned into a merchantable product. To accomplish this is quite another story, but the sentiment throughout the land indicates that these problems are being successfully attacked and will be solved in time.

There are many fruitgrowers who would attempt the canning of fruits and vegetables at home if they were in possession of the detailed information that is necessary for such work. The progress of work of this nature will be in proportion to the work done in educating the growers. So important is the need of experimental work on this subject that many of the experiment stations have organized and are con-

ducting canning clubs for boys and girls. This club work is most highly developed in the Eastern and Southern States, where truck growing, small fruit culture and general horticulture are highly developed. By this method the children become interested and they in turn cause the older members of the family to take an active part in this work. Past experience has shown that where a community is informed or assisted in work of this kind it becomes highly satisfied with the results. The fruitgrower is in need of accurate information of all the details connected with the production, canning and distribution of his product. With this information many fruitgrowers are going ahead successfully. The various manufacturers of home-canning outfits have compiled elaborate pamphlets of recipes for all of our various commodities, but this information alone is not sufficient. The operator of the home-canning outfit must necessarily become expert in all of the minor details of the process before a first-class product can be put up. Local conditions vary materially, all of which play an important part in the final results. To work out accurate information concerning the





**Sam Connell says:**  
"The World is Our Field"

**Uncle Sam will  
take your order**  
"I'll ship it anywhere"

"—geography doesn't count with us—  
Uncle Sam goes everywhere—any time  
—all the time. I ship to the four corners  
of the globe—I ship promptly, and  
save you money on every item I ship—  
doors, sash, windows, columns, stair-  
ways—everything in fact needed in the construction  
of a home, barn, garage or any part thereof."

### Everything Needed to Build A Home

"Write me your needs—let me quote you prices  
on your mill material and I'll guarantee to save  
you money on the investment. Write me for a catalogue;  
it will be a great help to the builder."

**SAM CONNELL, Manager**

**Northwest Door Company, Portland, Ore.**

## BIG PROFITS in the Cider Business

### MOUNT GILEAD Cider and Grape Juice Presses

are a good investment and big money makers. 10 sizes, 10 to 400 barrels daily juice capacity. Hand or power. Fully guaranteed.

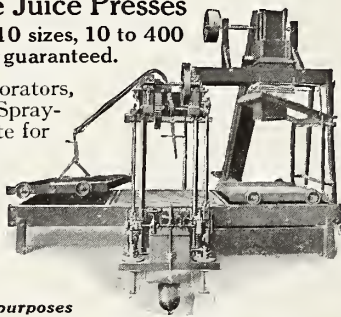
**WE MAKE** a complete line of Cider Evaporators, Apple Butter Cookers, Vinegar Generators, Spraying Outfits, Cider and Vinegar Filters, etc. Write for catalog and information. No trouble to answer your questions. We can show you how big money can be made.

We manufacture Hydraulic Presses and Pumps for all Purposes, Cotton Seed, Olive and Castor Oil Presses, Presses for Packers and Butchers Scrap, Tankage, etc. Forging, Forcing and Bending Presses for Railroad and Machine Shops.

*Our line covers every type of Press for high pressure purposes*

**THE HYDRAULIC PRESS MFG. CO., 60 Lincoln Ave., Mount Gilead, Ohio**

**BERGER & CARTER CO., Pacific Coast Representatives**  
504-506 Mission Street, SAN FRANCISCO, CALIFORNIA



home-canning of fruits and vegetables on the farm, the Idaho Experiment Station inaugurated an experiment in 1912 to extend over a period of five years.

The experimental work at this station is confined entirely to the preservation of fruits and vegetables by canning. It is hoped that the results of five years' work can be used by the people of the state who care to engage in this work on their own farms. We intend to show the exact cost, the methods employed in all of the details, the advisability of doing this work on the farms of the State of Idaho, and in any way possible to assist in preventing the loss of horticultural products now noted throughout the state. The plan of investigation includes the follow-

ing: (1) To establish at this station a small home-canning outfit having a capacity of from 5,000 to 10,000 cans daily, fully equipped. (2) The canning of fruits; to work out formulas for the handling of such fruits as are grown in the various sections of this state. (3) The canning of vegetables; to determine the best methods of canning peas, beans, corn, tomatoes and other vegetables which lend themselves to this purpose and are satisfactorily grown in the state. (4) Gathering field data; to determine whether home canning will pay on the average farm data is being collected to show the yield of the various crops, the cost of production, the cost of preparing for the cannery, to compare the prices of home-canned

products with the factory prices, and finally to determine if the prices of the canned products of fruits and vegetables are comparable with the prices of fruits and vegetables in the fresh state. Although experimental work at this station is in its second year, the results secured are encouraging. In order to get correct data on the home-canning of fruits and vegetables it was first necessary to ascertain what firms were making and handling apparatus adapted to this purpose. No trouble was found in locating a number of firms. Most of these firms now have branch offices in our Western territory. The following firms manufacture home-canning equipment, making a variety of outfits: Tharp Hardware and Manufacturing Co., Monroe, North Carolina; The Nelson Cannery Co., Cochran, Georgia; National Can Co., Baltimore, Maryland; Dixie Hardware and Manufacturing Co., Elkin, North Carolina; The Raney Canner Co., Chattanooga, Tennessee; Modern Canning Co., Chattanooga, Tennessee; Northwestern Steel and Iron Works, Eau Claire, Wisconsin; F. S. Stahl, Quincy, Illinois; Consumer Can Co., Baltimore, Maryland; The U. S. Printing and Lithograph Co.,

## SHIPPERS!

Your Problem is the High  
Cost of Marketing

One of the Remedies  
Is a Membership  
in the

**Produce Reporter Co.**

212 W. Washington St.  
Chicago, Illinois

### YOU WANT THE BEST SPRAYER



Write for  
Catalogue #6  
**BEIERSON MACHINERY CO.**  
Manufacturers

You want to save time, temper, trouble and trees. You want to raise fruit that brings the highest prices. You want to know all about our sprayer before you buy. There is more you ought to know. Do You Want To Know The Price?

182 Morrison St., Portland, Ore.

## The Paris Fair

Hood River's Largest and Best Store

RETAILERS OF

**EVERYTHING TO WEAR**

AGENTS FOR

**HAMILTON & BROWN AND  
THE BROWN SHOES**

**HART, SCHAFFNER & MARX  
CLOTHES**

**MANHATTAN SHIRTS**

**JOHN B. STETSON HATS**

**NEMO CORSETS**

**Strictly Cash—One Price to All**



Cincinnati, Ohio; E. F. Kirwan & Co., Baltimore, Maryland; Farm Canning Machine Co., Meridian, Missouri; The Sanitary Can Co., 447 West Fourteenth Street, New York City.

**Cost of Home-Canning Outfits**—During the progress of this work it has been found that the prices of these outfits vary greatly for each manufacturer. The prospective purchaser should write for special prices before he makes his purchase. The fluctuating price is due to the cost of the raw materials and other variations of commerce. The following prices on home-canning outfits represent a fair average. Five companies are here represented. This list is chosen at random from the catalogs of a number of companies which we have on file, and these prices include all accessories:

*Northwestern Steel and Iron Works, Eau Claire, Wisconsin, Makers of "National Steam Pressure Canning Boilers"*

Home outfits, 200 to 500 cans daily, \$15.00.  
Hotel outfits, 1,000 to 2,000 cans daily, \$25.00 and \$50.00.

Factory outfits, No. 1, 2,000 to 5,000 cans daily, \$100.00.

Factory outfits, No. 2, 5,000 to 10,000 cans daily, \$200.00.

*Modern Canning Company, Chattanooga, Tennessee*

No. 14, \$10.00.

No. 21, holds 21 cans No. 3 at one filling, \$10.75.

No. 36, holds 36 cans No. 3 at one filling, \$14.50.

No. 57, holds 57 cans No. 3 at one filling, \$17.50.

No. 95, holds 95 cans No. 3 at one filling, \$28.50.

*F. S. Stahl, Quincy, Illinois*

Outfit No. 0, holds 12 No. 3 cans, \$5.50.

Outfit No. 1, holds 30 No. 3 cans, \$14.00.

Outfit No. 3, holds 60 No. 3 cans, \$25.00.

*The Raney Canner Co., Chattanooga, Tennessee*

No. 1 outfit complete, \$5.00.

No. 2 outfit, capacity 250 to 400 cans daily, \$7.50.

No. 3 outfit, capacity 1,000 to 2,000 cans daily, \$20.00.

No. 4 outfit, capacity 2,000 to 10,000 cans daily, \$30.00.

*The Wilson Canner Company, Cochran, Georgia*

Outfit No. 1, family size, 360 cans daily, \$10.00.

Outfit No. 2, 480 cans daily, \$12.50.

Outfit No. 3, 720 cans daily, \$17.50.

Outfit No. 4, 2,400 cans daily, \$60.00.

The accessories necessary with any one of these outfits may be purchased for about the following prices with transportation added:

No. 1 can, \$11.00 per thousand.

No. 2 can, \$15.00 per thousand.

No. 3 can, \$18.00 per thousand.

No. 410 can, \$18.00 per thousand.

Solder-hemmed caps, \$1.25 to \$1.50 per thousand.

Well-printed labels, \$1.25 to \$2.00 per thousand.

Two years' work at the Idaho Experiment Station give the following figures on the cost per can of handling fruits and vegetables:

*Total Cost per Can on Fruits and Vegetables*

Kind	Variety	Cost
Peas, No. 2 cans.....	Dwarf Telephone	.082
Peas, No. 2½ cans.....	Alaska	.107
Plums, No. 2½ cans.....	Green Gage	.089
Cauliflower, No. 3 cans.....	Burpee's Dry	.07
	Weather	.087
Apricots, No. 3 cans.....	Moorpark	.109
Pie cherries, No. 2 cans.....	Kentish	.36
Sweet " " No. 10 cans.....	Royal Ann	.142
Raspberries, No. 2 cans.....	Cuthbert	.875
Logan " " No. 10 cans.....	Lucrétia	.54
Dew " " No. 10 cans.....	New Seedling	.169
Straw " " No. 2½ cans.....	Italian	.102
Beans, No. 3 cans.....	New Stringless	.082
Tomatoes, No. 2½ cans.....	Elberta	.39
Peaches, No. 10 cans.....	Earliana	.062

One bushel apples fills 20 No. 3 cans.  
One bushel peaches fills 24 No. 3 cans.  
One bushel pears fills 30 No. 3 cans.  
One bushel plums fills 30 No. 3 cans.

# "PEARSON'S"

(CEMENT COATED)



## ARE THE BEST BOX NAILS

**J. C. PEARSON COMPANY, Inc.**  
Old South Building  
Boston, Mass.  
Sole Manufacturers

**A. C. RULOFSON COMPANY**  
No. 315 Monadnock Building  
San Francisco, Cal.  
Pacific Coast Sales Managers

# Increase Your Profits

BY USING A

## Schellenger Fruit Sorting Machine

The fruit packing problem, formerly difficult and expensive, is made easy and cheap by use of the *Schellenger Fruit Sorting Machine* which fully meets every requirement of the most discriminating fruit grower.

Read what it has done for a few of our purchasers.

It will do the same for you:

"Three packers packed on an average of 350 boxes per day. The machine is perfect in every respect and I would not sell it for \$500 if I could not get another. It is a labor and money saver."—John Gerry, Cashmere, Washington.

"It gives us pleasure to recommend this machine to our friends, as it did good work for us and saved both labor and fruit."—McCue & Son, Greenwood, Virginia.

"I can't praise the machine too high. Packers will leave other places and come to the machine when they get the opportunity, so that it is easy for machine owners to get all the help they can use."—Harry I. Shotwell, Wenatchee, Washington.

"I packed 23 cars of apples with eight men in the packing house. Total expense for labor in packing house, including handling, sorting, packing and nailing up, averaged 3½¢ per box."—Ezra V. Steed, Clearfield, Utah.

"The average cost of sorting and packing was 2¢ to 4¢ per box."—Yonah Fruit Co., Cornelia, Georgia.

"Machine very satisfactory and it will do all that is claimed for it. Would not take double the price we paid for it."—Covesville Orchard Co., Covesville, Virginia.

"The machine gave us excellent work and we are much pleased with it."—A. Weed & Son, North Rose, New York.

"Everybody owning a fair sized orchard should have one as they are certainly a labor saver."—Empire Lumber Co., Empire, Mich.

"We are perfectly satisfied with the work done."—Oka Agricultural Institute, La Trappe, Quebec.

Mail this coupon today for free catalogue.

**SCHELLENGER FRUIT SORTING MACHINE CO.,**  
609-611 S. Paulina St., Chicago, Illinois

You may send me one of your free catalogues.

Name.....

Address.....

**SCHELLENGER FRUIT SORTING MACHINE CO.**

609-611 S. Paulina St., Chicago, Illinois





Did you have Spray troubles last season? Some growers had very serious ones.

#### WHAT'S THE USE?

Why risk your crop by using new and untried brands or preparations? Let your Experiment Station do the experimenting.

Why not use an ARSENATE OF LEAD that has successfully weathered the varied climatic conditions of Washington, Oregon, Idaho and Montana the past four years?

## The Grasselli Brand Has Done This

#### IF IN DOUBT

Ask your local or state authorities. They are best qualified to advise as to local conditions.

#### A FEW OF OUR DISTRIBUTERS:

Denney & Co.	Payette, Idaho
Hood River Apple Growers' Union	Hood River, Oregon
Hardie Manufacturing Company	Portland, Oregon
Inland Seed Company	Spokane, Washington
Plough Hardware Company	Wenatchee, Washington
Rogue River Fruit and Produce Association	Medford, Oregon
C. J. Sinsel	Boise, Idaho
Yakima County Horticultural Union	North Yakima, Washington
Zillah Fruit Company	Zillah, Washington
Provincial Fruit Inspector	Vancouver, B. C.
Missoula Drug Co.	Missoula, Montana
Salem Fruit Union	Salem, Oregon
Utah Fruit Growers' Association	Salt Lake City, Utah

#### MANUFACTURED BY

## The Grasselli Chemical Co.

CLEVELAND, OHIO

One bushel tomatoes fills 18 No. 3 cans.  
One bushel string beans fills 30 No. 2 cans.  
One bushel blackberries fills 50 No. 2 cans.  
One bushel corn fills 45 No. 2 cans.  
One bushel peas fills 16 No. 2 cans.  
One bushel sweet potatoes fills 30 No. 2 cans.  
One bushel okra fills 30 No. 2 cans.  
One bushel strawberries fills 35 No. 2 cans.

While the yield varies widely in different localities the following table is indicative of what may be expected in profits when the product is canned at home. The following figures are given by the Northwestern Steel and Iron Work and represent very nearly the correct figures as checked up in our experimental work here. The average yield of an acre of peaches is 200 bushels. This quantity should fill 5,000 No. 3 cans and the transaction stands as follows:

#### Selling

5,000 No. 3 cans at 10c, wholesale.....\$500.00

#### Cost of Packing

5,000 No. 3 cans at \$18 and freight .....	\$100.00
Shipping cases .....	31.20
Labels .....	10.00
Acid and solder .....	3.00
Fuel .....	2.00
Labor .....	18.00—
	164.20

Net gain .....\$335.80

The following transaction is given to show what may be expected in the distribution of home-canned products:

#### November, 1913, Sold to the Zeta Delta Fraternity, Moscow, Idaho

100 No. 2 cans corn at 9c .....	\$ 9.00
120 No. 2 cans beans at 10c .....	12.00
50 No. 10 cans peaches at 45c .....	22.50
144 No. 2 cans peas at 11c .....	15.84
216 No. 2½ cans tomatoes at 8c .....	17.28
12 No. 10 cans cherries at 40c .....	4.80

Total .....\$81.42

## Home Garden Making

By Professor A. G. Bouquet, Oregon Agricultural College

HOME gardening is especially the delight of the city man who loves this form of recreation from the greater part of his day with everything but that which appeals to his inner self. The home garden has been and always will be a pleasure and a profit to thousands because of its call to nature, its deepening of one's love for things that grow, its possibilities of luring one away from business care and worry, its source of recreation to the younger members of the family and in its value in keeping lots and backyards cleaned up. It is a source of credit to the town, is wholesome and healthful and its sphere of broadening one's outlook of things. Its most important asset is helping the family in the reduction of the cost of living. A good home garden, if properly conducted, is a money-saving proposition as well as a source of satisfaction. Vegetables of good quality are very often difficult to get and the supply of them comes quite irregularly. Good vegetables are more cheaply grown than bought—a bigger variety can be had by growing them in the home garden and there is a much more regular supply.

There should be a good vegetable garden on every farm. Surely the average farmer cannot afford to buy his vegetables when he has so much land ready to be worked. He will find that in dollars and cents the vegetable garden is among the best paying parts

FOR BEST RESULTS USE OUR

## Filtered Lime-Sulphur Solution

(EVERY DROP USABLE)

AND

## Neutral Lead Arsenate

MADE IN OREGON

WRITE US FOR PRICES

## Oregon Arsenical Spray Co.

J. C. BUTCHER, Proprietor

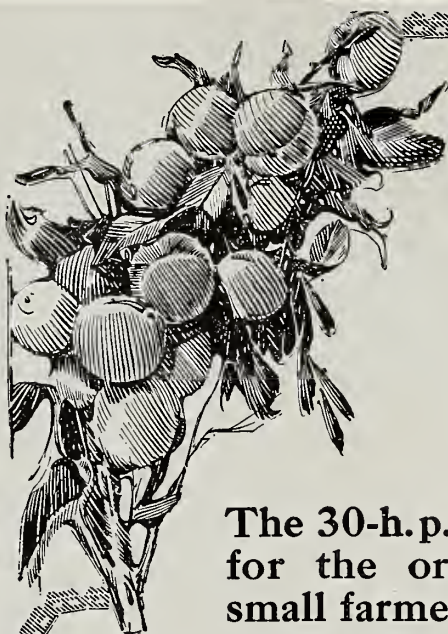
CLACKAMAS, OREGON



of the farm. The younger members of the family can help a great deal, and instead of the hard-working farmer's wife being worried as to the variety of food for the next meal she will be able to put on the table quite an assortment of vegetables if there is a good vegetable garden. A garden with the drudgery left out means one properly planned on paper before work begins, one in which particular care is used in buying seed, in growing one's own plants rather than buying them, in the proper distribution of crops in the garden so as to get the greatest amount of good from the space, in keeping the soil constantly working, in choosing suitable varieties of quality for successful marketing, in knowing a few garden pests and how to exterminate them, in cultivating with serviceable tools that do efficient work easily, in having vegetables as long as possible and in having a love for the work, which is most important.

First in importance comes the seed. It is the foundation of a good crop. The best seed is none too good. Never buy cheap seed. Growers should buy the seed from houses that do a large business in seeds, or only from reliable local grocers who will guarantee that the seed is fresh and not a part of the left-over stock. It may do for the grower who is not discriminating, but if a gardener thinks that he will economize in the seed purchasing he will find from experience that it is most expensive to buy seed haphazardly. There is the greatest difference in good and poor seed as to the results afterward obtained in the garden. Good plants are of extreme importance. Weak plants will mean a poor crop, one that is late in maturing, one that is particularly subject to insect pests and diseases, and also to the influence of drought. It is preferable to be your own plant producer. More satisfactory plants are grown by the aid of the hot-bed and cold-frame than can be bought. Plants grown at home have plenty of room in which to develop and one is sure of having the variety desired. Unless the purchased plants are better than those usually seen they will prove inferior to the well-grown plants at home. There is great satisfaction in growing your own vegetable plants, and the item of purchasing all the plants needed for the garden is no small one.

Varieties of vegetables for the home garden should be chosen primarily for their quality and the time at which they mature. Grow standard varieties. Some of the oldest varieties are often the best. Do not be led away too much with so-called novelties. Many of them are old varieties with new names. In choosing varieties of sweet corn, for example, the gardener would need Cory or Crosby, followed by Golden Bantam, following these with Howling Mob and a few late varieties such as Evergreen and Country Gentleman. Some of the acclimatized varieties that have been bred by Gill Brothers of Portland should prove useful. The average home gardener does not have a very clear



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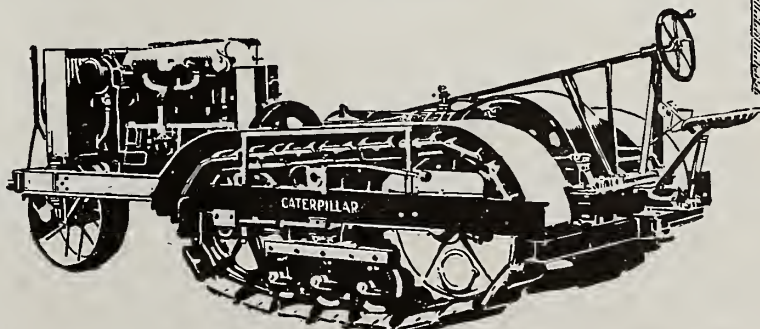
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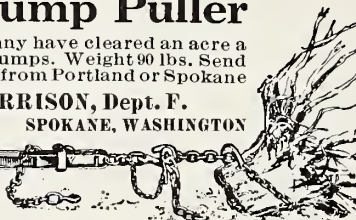
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idea about head lettuce. One must have good varieties such as Tennis Ball, May King and New York for spring and fall, using such varieties as Hanson, Salamander and Iceberg for summer. Give the head lettuce plants plenty of room in the row, preferably eight or ten inches. Grow in the early spring by transplanting and later by direct seeding and thinning. To have a nice supply of celery in the home garden successional sowings should be made so as to have plants of different sizes in the garden for blanching at different times. Golden Self-Blanching is among the best and should be blanched by using boards against the plants when the plants are from twelve to fourteen inches high. Keep the plants growing steadily and give ample water and fertilization for the best stalks. There are quite a number of vegetables that are not grown very largely commercially that should find a place in the home

garden; for instance, Swiss chard, kohlrabi, Scotch kale for winter use, peppers for fall use, egg plants, sprouts, etc. All of these are readily grown and once grown will always be wanted.

To know the habits of the common insect pests and diseases and some useful remedies or preventives is necessary for the gardener if he would have maximum crops. Radishes, turnips and onions are damaged a good deal with small white maggots that are difficult for the commercial man to hit, but are easier for the small gardener. Powdered tobacco at the time when the seedlings are beginning to show through the ground is recommended; also kerosene one pint and sand three gallons, applying a small handful along the rows early in the season. For the common cabbage worm hot water, 150 degrees Fahrenheit, or a salt solution will kill the worms; or dust the plants when the dew is on the foliage with

paris green, four ounces, mixed with five pounds of flour or sulphur. The worm is similar to the worm that attacks cauliflower and other members of the cabbage family. Slugs are always more or less of a nuisance in the home garden. The poison bran mash for cutworms is a good remedy, or cabbage leaves can be dipped in dripping fat to which is added one teaspoonful of lead arsenate, and scattered about the garden. Sacks, boards, etc., are hiding places for these slugs, where they may be trapped and destroyed. Cutworms are best gotten rid of by using a small amount around each plant or broadcasting over the garden the following: Bran, sixteen pounds; paris green, one-half pound; salt, one-fourth pound; syrup, one quart, and a little warm water to make a crumbly mash. Tomatoes are largely bothered by small flea beetles that make little holes in the leaves. One part sulphur and two parts lime dusted through a cheesecloth sack is a good preventive.

Other information concerning garden pests will be sent on application to the Department of Entomology of the Oregon Experiment Station. Concerning the use of manures in the home garden, where manure is more or less of a scarcity, a small amount of liquid manure kept on hand in a barrel will prove of great benefit. Nitrate of soda in liquid form, two ounces to a bucket of water, at successive intervals, will stimulate vegetable plants. Chicken manure should be used with caution, as it is quite concentrated. Mix with three or four parts in bulk of soil and apply a small portion around each plant or broadcast over the garden and cultivate in.

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## Control of the Codling Moth

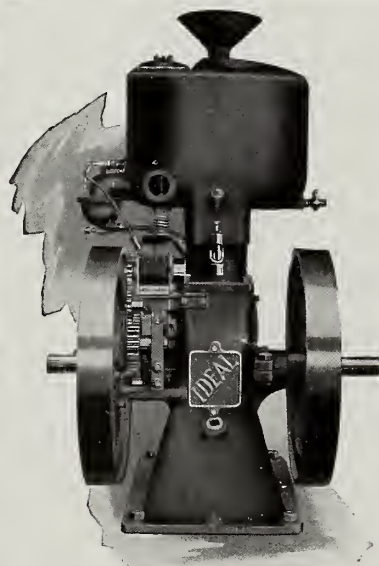
By H. F. Wilson, Entomologist, Oregon Agricultural College, Corvallis

IN the life of every insect there are certain periods when practical control measures can be applied with greater success than at other times. In the case of the codling moth this period is between the hatching of the egg and the entrance of the larva into the fruit. Regardless of whether the eggs are deposited on the leaves or fruit, about sixty to seventy per cent of the larvæ of the first generation enter the fruit at the calyx end, the others entering from the side. In either case the first tissue gnawed from the leaves or skin of the apple seems to be taken into the body, and if coated with poison will cause the death of the insect before serious injury can be done. A number of writers claim that the larvæ hatched out on the leaves will take their first meal there and do not reach the fruit at all. Upon these facts and suppositions are based our present recommendations for the control of the codling moth. The first recommendation given is that the calyx cup must be filled with poison at the proper time. The second is that fruit and foliage must be kept coated with poison throughout the periods of emergence of the larvæ.

There is a great abundance of evidence to show that spraying for the codling moth can be made from 90 to 99 per cent efficient by every grower, depending upon factors discussed later. Just how many applications of spray are necessary to bring this about will undoubtedly depend upon local conditions. All entomologists do not seem to agree upon this subject, although the general recommendations throughout the United States indicate that at least two applications are necessary and that three or four are more dependable. A summary of the experiments along this line would indicate that under rather ideal conditions as high as 99 per cent clean fruit can be secured from the calyx spray alone. Two applications under less ideal conditions are indicated as giving the same results. Three applications properly applied will, except under the most adverse conditions, give equally good results, and more than four are entirely unnecessary. These figures are taken as the maxi-

mum of what has been done, and do not show the minimum range of as low as 84 per cent clean fruit in the same experiments. We should also remember that the above figures were taken from experiments that should produce

the highest degree of efficiency, having been carried on by trained entomologists. (In actual orchard practice we should probably count on a reduction of these results from 10 to 20 per cent.) Therefore, in summing up the problem



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as a whole from the standpoint of the commercial orchardist and his difficulties, I am compelled to believe that the calyx spray alone will not prove practically efficient in every-day orchard practice. Further, that nearly all comparative experiments indicate that three applications properly timed give the best general results, and that except in sections where excessive rains may wash off the poison, more applications are unnecessary and not economical.

There may be some disagreement as to the time when the second, third or fourth application should be made, but certainly we must all agree that the first spray should be applied after the petals drop and before the calyx lobes close. Regardless of the time of appearance of the first larvæ the calyx lobes close within a week or ten days after the falling of the petals, and if the poison is not placed in the calyx cup the most vital point of attack is left unprotected. By a second spray we do not mean a second calyx spray, but the application to be made at the time when the eggs are hatching and the first brood of larvæ are entering the fruit. In the Northwest the time between the calyx and the second spray will, according to Melander's observations in Washington and ours in Oregon, vary from two to six weeks. The principal divisions are found on either side of the Cascade Mountains. On the coast side the period is approximately from four to seven weeks and on the inland side from two to four weeks. In order to tell the length of period in any one section careful observations would have to be made for each. Every orchardist, if he has the patience to study a little and make observations, will be able to do this for himself. The third application is usually given to catch the larvæ of the second brood and should be made upon the same basis as the second, namely, the hatching of the young larvæ. The life period from the young larvæ of the first brood to those of the second occupies about five weeks, so that generally the third application should be made five weeks after the second. Where a fourth is deemed advisable for late "worms" and bud-moth larvæ spray three weeks after the third.

In Oregon we have found that conditions which exist in the Eastern States have but little bearing upon our somewhat dissimilar conditions. Early spraying alone will not save the fruit, and it is not only practicable but necessary to fight the second brood. So far as the codling moth is concerned, early applications, after the calyx lobes close, are of very little value in Western Oregon. In the orchard sections of that region the petals fall from the first week in May (at Roseburg) to several weeks later in sections along the coast (at Astoria). The first larvæ enter the fruit at Corvallis rarely before June 25th, so that a period of about six or seven weeks exists between the time of the calyx spray and the time when the larvæ enter the fruit. This is in a great measure due probably to the fact that the eggs of



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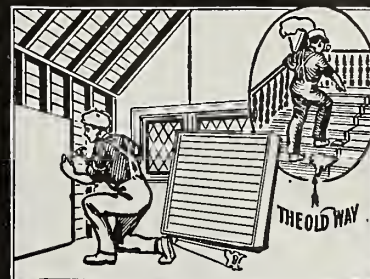
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the codling moth are not deposited until the evening temperatures reach 60 degrees Fahrenheit or above. At Roseburg, Oregon, the records of the United States Weather Bureau for the past ten years were examined and notes made as follows: After May 20, at dusk of each day, the temperature is about 60 degrees Fahrenheit or above. Beginning with June first the evening temperature, up to twelve o'clock, does not fall below 65 degrees Fahrenheit. At Roseburg, June 8, eggs, hatched and unhatched, were found with an occasional larvæ entering the fruit. At Medford the larvæ begin to work in the fruit about the same time.

Make at least three applications and in renovating old orchards a fourth will not do any harm. In all sections of the state spray immediately after the petals fall. In all sections of Western Oregon it is not necessary to spray two weeks after the first application. Make the second application approximately six weeks after the calyx spray and the third about five weeks after the second. Where a fourth application is deemed necessary, spray about three weeks after the third. In Eastern Oregon spray from two to three weeks after the first application, depending upon the weather conditions. Make a third application five weeks after the second and a fourth two weeks later than the third.

The terms used in methods of application designate driving sprays and mist sprays. A driving spray is one in which the spray is forced through a coarse nozzle in a heavy stream, so as to completely drench the trees or foliage. A mist spray is one in which the spray is forced through a fine nozzle in the form of a mist and it is desired to thoroughly coat all parts with a fine film without causing the spray to form into drops and run off. While there have been a few experiments to show the different results liable to follow, I cannot recall any definite data having been obtained. In different sections of Oregon both methods are used for all sprays and equally good results are obtained in both cases. I am of the opinion that there is little reason why results should not be satisfactory in each case if the calyx cup is filled. But from the standpoint of economy the mist spray is the more desirable, since only half as much spray will be used in this as in the drenching spray. In either case satisfactory results can only be obtained by steady and strong pressure. A little experimental work by the orchardist himself will most likely determine the proper method to be used in his case. The following practice should prove satisfactory in all cases: (1) Never spray when your engine is running under 150 pounds pressure. (2) A forceful spray, whether driving or mist, is absolutely essential for thorough work and penetration to all parts of the tree. (3) A driving spray should be used for the calyx application in order to reach the inner cup. (4) A mist spray, being more economical than the driving and



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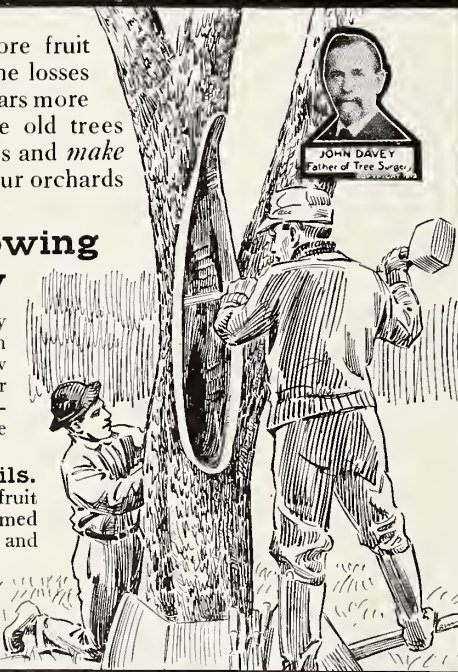
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just as effective, should be used for later applications.

Of the various spray materials that have been used in combating the codling moth, arsenate of lead is now the standard. Arsenite of zinc, a new material that has been on the market for the last three or four years, seems to have considerable merit, but owing to the fact that it may and does cause foliage injury, it is making slow progress. Competition has compelled the manufacturers to improve their spray chemicals to the highest possible point of perfection; and arsenate of lead has passed through a strenuous development from the crude home-made product to the almost perfect manufactured article of today. This does not mean that all brands have reached perfection, nor does it mean that somewhat imperfect brands are not satisfactory in codling moth control. There are two different known arsenates of lead used in insect control and most commercial brands are a mixture of these two. These conditions no doubt will account for the variable results obtained. Just why we should have two kinds of the same material is a chemical problem which I will not attempt to explain. It is enough to say that by manipulation of the chemicals used two stable compounds are produced with distinct amounts of arsenic in each. They are known under various names, as acid and neutral or non-acid arsenates of lead, but all of these names are misleading to the fruit-grower because of the suggested presence of an acid of some kind, which is not the case. In our work at the Oregon Experiment Station we now designate them as lead hydrogen arsenate and basic arsenate. The principal difference between the two is that, chemically pure, the lead hydrogen arsenate contains approximately 33 per cent, and the basic arsenate of lead contains approximately 25 per cent arsenic oxide, the active killing agent. In comparing the two kinds we have found that the lead hydrogen arsenate is superior in many ways to the basic form. The main point in favor of the latter is the fact that it can be added to lime-sulphur with less decomposition and supposed loss of efficiency than in the case of the other. No one has yet demonstrated that there is a loss of efficiency in a combination of the lead hydrogen arsenate, although it is well known that there is a greater apparent chemical decomposition. Experiments conducted at Corvallis during the past summer show that the latter is quicker acting than the basic and that it is also much more finely divided than the basic form and will stand in suspension much longer. Our work also showed that in combination with lime-sulphur and in strengths containing equal percentages of arsenic oxide, the lead hydrogen arsenate was as much or more efficient than the basic. (This does not mean that the former combination is recommended for orchard practice.) Considerable experimental work yet remains to be done with both of these sprays in order to determine



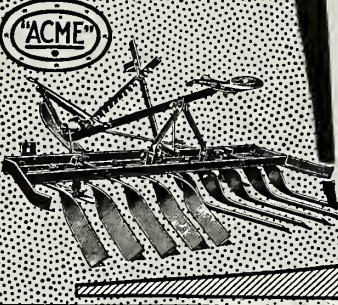
their limitations. But except in cases where proven otherwise, I would recommend the lead hydrogen arsenate when used without lime-sulphur. Originally all arsenates of lead were sold in paste form, but now several manufacturers are producing and selling the lead hydrogen arsenate in powdered form as well. We have used the powdered basic form in some experiments with satisfactory results, but its great tendency to settle may make its use prohibitive in this form.

In the economy of spraying, combination or mixed sprays have been evolved for the purpose of fighting insect pests and fungous diseases with a single spray. In this work arsenates of lead, "Black Leaf-40," etc., seem to mix well with the fungous sprays, and these mixtures are now a part of general orchard practice. Our greatest difficulty comes from the fact that both bordeaux mixture and lime-sulphur alone have a tendency to cause spray injury, and in the case of lime sulphur the arsenates of lead seem to increase the injury. Our experiments at Corvallis show that at the time of the first application for codling moth the combinations are much safer than for later applications. That climatic conditions may and do enter to complicate the spray problems is quite evident. Just why spray injury is more prevalent in some seasons is a problem that still needs considerable research work, and until solved or until some fungicide is found that will control apple scab without causing spray injury the growers must expect to suffer a loss in this manner. There is a general agitation at this time regarding sulphur as the most likely material to do this, and there are a number of sulphur compounds on the market which give promise of some merit. Just how they are going to turn out is still an open question.

How much poison is necessary? By this we mean, is it necessary to use one, two or more pounds of arsenate of lead per fifty gallons of water for efficient control. General recommendations vary between one and three pounds. Hardly enough comparative experiments have been tried to determine this point except within certain limits. Two pounds is a great plenty so far as the codling moth is concerned. A number of orchardists have continued good success with one and one-half pounds, and several of our entomologists claim to have had excellent results with one pound. These figures are based generally upon the paste forms, and if powder is used should be reduced accordingly. The powdered forms, if chemically pure, are just twice as strong as the paste and contain 50 per cent water content. Here, again, is a problem for the individual. If you are using three pounds per fifty gallons of water, I believe that amount is too much. Try two to fifty on a small part of your orchard next year and compare with the rest of the orchard. If two pounds proves successful, then try one and one-half and even one pound if you think it is worth

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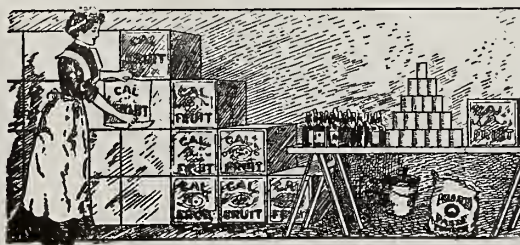
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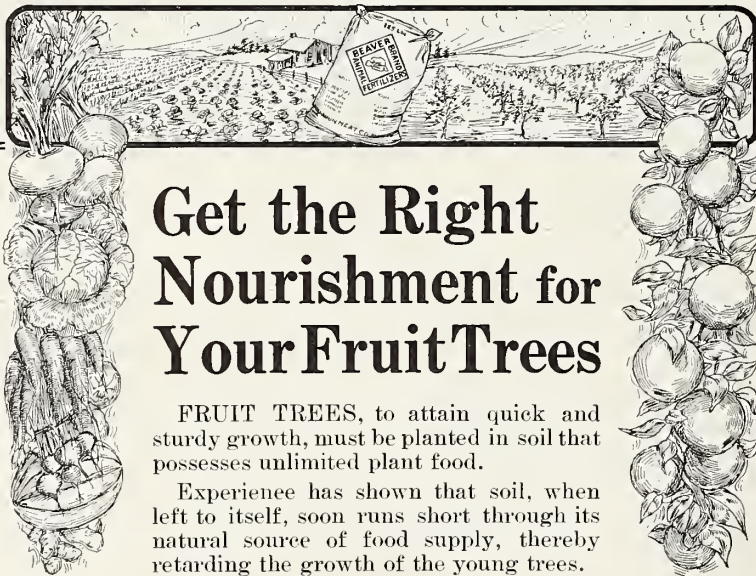
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while. However, other leaf-feeding insects must be controlled as well as the codling moth, and the weaker strengths may not do for these. If after your experiments you find this to be the case consult your entomologist in the matter.

No orchardist can hope to be lucky enough to successfully control insect pests and fungous diseases year after year if he has an inferior and inefficient spray outfit. In any enterprise success depends upon efficiency, and as the efficiency is great or small so will the enterprise be. In my opinion, after thorough application the most necessary thing in successful spraying is pressure; not pressure that varies from 50 to 250 pounds, but pressure that stands at 150 pounds or over all the time. It is sometimes hard to keep this up on account of leaky valves, poor packing in the pump, etc., but certainly there is no economy in permitting such conditions to continue. Neither is there economy in using worn out, leaky hose or connections. Probably the most provoking and sometimes unavoidable trouble is with the engine. Of all the tortures invented by the evil one, certainly a poorly working spray engine is the father of them all. The outfit to be used rests mostly upon the judgment of the grower. Of the various power machines manufactured it is hard to choose the best. Any one of the standard makes should prove satisfactory.

During a visit to some California orchards the past summer I was shown a system of handling the spray problem which looked exceedingly good if practical. I did not see it in operation, so can only speak from hearsay. The power outfit and tank were stationary at one side of the orchard. Leading from the storage tank and along one side of the orchard was a conducting pipe. At intervals of 100 to 200 feet apart a series of lateral pipes extended from the main lead to the other side of the orchard. At intervals along these, connections were arranged for attaching the spray hose, the leads of hose being long enough to reach to the center row of trees. The man in charge assured me that the cost was nominal and that the whole plan was much more satisfactory than the movable outfit and more economical. One important feature was the fact that the spraying could be carried on without taking a team or teams from other work.

Unsuccessful control of the codling moth may usually be found due to one or more of the four factors which follow: Lack of personal supervision of the actual spraying operations; inefficient spray outfits; careless applica-



tion of spray and lack of thoroughness; lack of knowledge of the habits and life history of the insect.

Relation of the control of leaf-feeding insects to that of the codling moth can be summed up very briefly. There are a certain number of insects that feed on the leaves and fruit of apples and pears, and the greater majority of these are killed by the poison sprays used against the codling moth. Some few have the habit of feeding in the buds or folded leaves in such a manner as to escape. These may have to be combated in another way. Others seem to be able to withstand the strengths ordinarily used, and it may be necessary or advisable to use greater amounts.

### Woolly Aphis

Professor A. L. Melander, entomologist at the State Agricultural Experiment Station at Pullman, Washington, has prepared the following statement and recommendations for combatting this insect in the orchards of that state. The woolly aphis is one of the most serious of orchard pests. It occurs both on the roots and on the branches of apple trees. The form above ground can be easily killed by spraying. A spray of tobacco, such as the black leaf dip, one part to sixty-five parts of water, or a kerosene emulsion, or even a combination spray containing these two mixed, will easily kill the aphis on the branches. To make sure of thorough work, the spray should be applied with Bordeaux nozzles and driven with considerable pressure. It is necessary to wet through the wool of the insects. If the spraying can be thorough, the ordinary sulphur-lime spray will destroy the aphis above ground.

For the root form there is no satisfactory treatment. Placing ground tobacco around the uncovered roots, or wetting the ground with the tobacco spray, sulphur-lime, or kerosene emulsion will kill off a small proportion of the root aphis, but is never likely to give complete satisfaction. The root aphis does not penetrate deeper than 18 inches below ground. In giving a root treatment it is best to uncover as much of the roots as possible before applying the insecticide. Banding the trees with tree tangle-foot applied over a band of cotton will keep the root form from migrating up the trunk to locate on the branches. In that way the branches can be kept free from the woolly aphis. When the woolly aphis attacks a tree the tree is poisoned, swellings occur even during the first year of attack and the growth of the tree, as well as of the fruit, is materially stunted. The root form causes gall-like swellings, preventing the root action and in the course of a few years causing decay of the roots. After a few years the tree is so undermined and weakened that it is practically killed. The woolly aphis is one of those insidious pests which should not be permitted to gain a foothold in the orchard.

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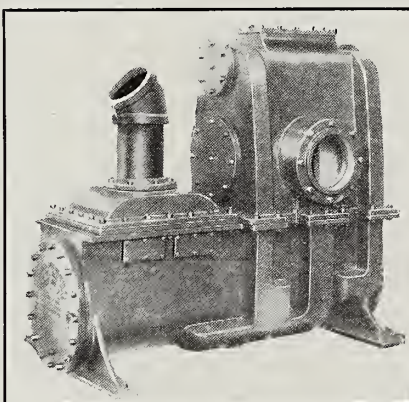
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## More Light on the Winter Bartlett Question

By Professor C. I. Lewis, Oregon Agricultural College, Corvallis

IN the Special Pear Edition of "Better Fruit," the September number of this year, I had an article entitled, "What Is a Winter Bartlett?" Since that time I have had a chance to investigate this question more thoroughly. One of the leading pear growers has held that the Winter Bartlett and the Glout Morceau were identical. The Glout Morceau is, of course, an old European variety and has been known for a long

time in the English market. This grower, at my request, sent me specimens of pears which he had bought as Winter Bartletts and which he said were identical with the Glout Morceau. He also stated that the scions from which this fruit was raised came from the parent tree in Eugene. The Winter Bartlett, as sold by some of our nurserymen on the Pacific Coast, is described by Wickson in his "California Fruits" as follows: "Winter Bartlett (Oregon).—Chance seedling in a dooryard in Eugene, Oregon. Introduced by George C. Roedling of Fresno. Closely resembles the Bartlett in shape and appearance and flavor, but a little coarser; ripens four months later than Bartlett in interior situations in California and promising as a winter pear."

There are probably quite a number of varieties now being sold under the name Winter Bartlett, but as far as the Pacific Coast is concerned, the pear which is being sold chiefly as Winter Bartlett is supposed to have come from this tree in a dooryard in Eugene. This year I had sent to me from the tree in Eugene specimens of the fruit. I also had sent from a grower who had bought Winter Bartlett and Glout Morceau specimens of the fruit, and I had sent to me from Portland from a known Glout Morceau tree some specimens of the fruit. The Washington growers told me the tree and fruit were identical. After receiving this fruit from Eugene, Washington and Portland we placed it in the cold storage plant at the college, waiting for the season of maturity, which was about Christmas. I invited several other horticulturists connected with my staff to examine this fruit carefully with me. After examining the fruit as regards its form, shape, color, general

characteristics, the color of the flesh, the texture and the flavor, we feel that the Winter Bartlett which was said to have originated in Eugene is nothing more or less than the old Glout Morceau, which has been known for a century in this country. At least I would wish to say this, that if the tree which originated at Eugene and which is now being sold as the Winter Bartlett, is not the Glout Morceau it is so close to it that it is practically impossible to tell them apart, and therefore it should not be propagated as a separate variety. It was impossible, when one was blindfolded, to know the difference in these two pears.

I wish the growers from all over the Northwest will send me specimens of pears which they believe to be the Winter Bartlett. I should like to trace down some of these other varieties that

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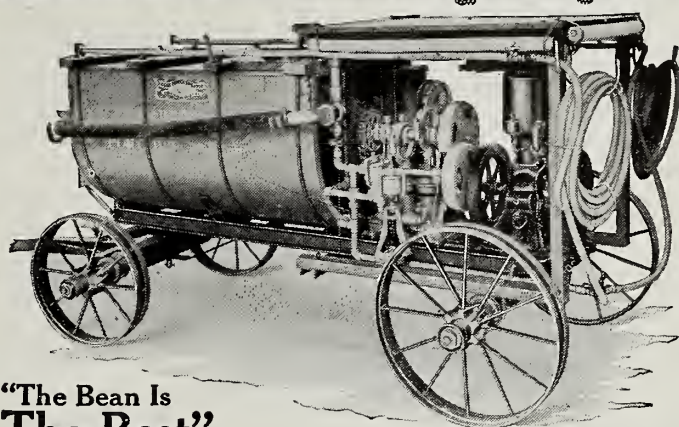
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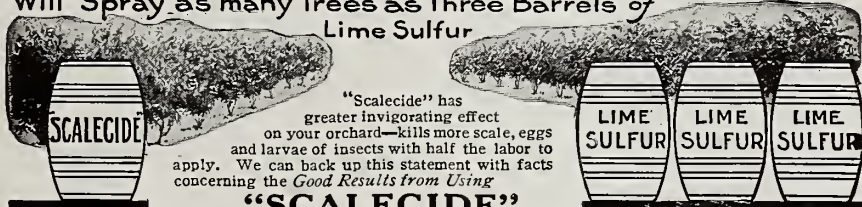
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are being called Winter Bartlett and see whether or not there are other cases where there is a mistaken nomenclature. Quite often in this country we have made the mistake of calling a tree of which we have no definite history a seedling. A tree is introduced and no one knows anything about its history except it is found in a dooryard, and it is given a new name. A good example of this is found in the Bartlett which is now grown in the East. This variety had been known in Europe for years as the Bon Chretien. It had been known in England as the Williams, but after being introduced into this country it was thought to be a new variety which had originated here and was given the name Bartlett. It is very easy for anyone to make a mistake of this kind. There are so many varieties of fruits on the market and it is impossible for many people to be acquainted with but a limited number of such varieties.

There seems no doubt but what in times past, in Europe at least, a genuine Winter Bartlett has been cultivated. The descriptions in the French works by Mas, du Hamel, Decaisne and LeRoy all confirm this fact. As yet, however, I have been unable to find the pear which these men describe. There is a possibility that this Bartlett pear which is so carefully and clearly described in these French works can be found here on the Pacific Coast, and if such is possible we should all co-operate in trying to find this variety and note its real merits under our conditions. In judging pears at many of our fruit fairs it is nothing uncommon to have various varieties labeled Winter Bartlett. For the greater part these have been of inferior quality and have been generally poor varieties of European origin that already had some other name.

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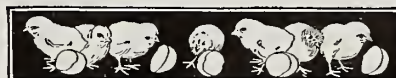
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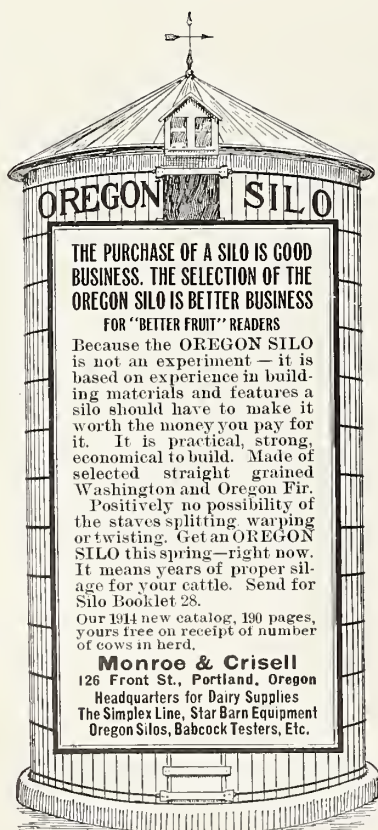
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## Co-operative Organization, Etc.

Continued from page 12

ally found in exactly that degree that its individual units may have cooperated to that end. It is therefore very necessary that those organizations dealing with the fruit industry and involving questions of standardization of quality, grade and pack, should adopt and maintain strict and rigid rules for the proper guidance of its members. And since concurrent effort in a strict observance of these essentials are of such vital importance to the welfare of the organization and not infrequently involve questions and precedents of grave import, the co-operative principles of a pure democracy should here find expression in the full consent of the governed and the members should themselves be permitted in regular annual meetings or conventions called therefor, to establish the rules covering the grade and pack of their product, in order that all may feel morally as well as legally bound to a full and strict observance thereof. Each local association should maintain a proper officer or inspector of unquestioned integrity and ability, from whose decision there should be no appeal so long as his employment obtains. Such officer should carefully scrutinize the products of each and every member as the same is received at the association warehouse, and designate its proper grade without fear or favoritism. Similar inspectors should be maintained by the sub-central office whose duty it should be to visit the local warehouses and see that the same interpretation is being given the rules and regulations, and that a uniform grade and pack is being maintained by each local. The central office should likewise maintain equality of grade and pack among its several sub-central districts through the employment of experts whose opinions and decisions will carry the seal of an authority upon all questions involved, and whose recognized ability and integrity will carry evidence of absolute fairness as between the members, the locals and the several sub-central districts. Since the varying soil and climatic conditions within any considerable territory usually produce fruits differing in size, color and quality, the determination and classifying of the proper grade and value of each, involves questions far-reaching and of vital concern to the maintenance of organization. We decidedly prefer and always advocate the employment of central or district packing houses where local conditions render their use practicable.

It is well nigh impossible to maintain exact uniformity of price throughout all markets covering fruits of the same grade and quality. It is likewise impossible to insure any shipment against the usual hazards and risks of transportation, or to prevent the occasional shipment from falling into a glutted market, or from being rejected by the purchaser and becoming "pocketed" on some transportation line where diversion and protection of



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through rate cannot be had. The pooling of fruits of like varieties, grades and sizes within given districts when soil and climatic conditions are reasonably uniform, is rapidly growing in favor among those growers who have tested the merits and advantages of that system. It insures to all growers alike an average of all markets during the duration of the pool. It insures to each grower a like price for like variety, grade and quality and forestalls all complaints of favoritism or unfairness on the part of sales managers. It avoids the heavy loss that otherwise occasionally falls upon some individual grower. It enables the sales department to more successfully work out the innumerable complex problems continually confronting it without fear of unjust criticism on the part of individual members not in close touch with the marketing conditions. Pooling, therefore, is the logical and natural outcome of successful co-operation.

The deep-rooted traditions of independence obtaining with the average American farmer has rendered his final conversion to co-operative organizations both slow and difficult. He is beginning to realize, however, that the powerful influence of consolidated capital and effort has been the source of the tremendous industrial progress of the present age, and notwithstanding his environment and life's habits which have enforced upon him a somewhat restricted point of view, he is fast learning the great possibilities of co-operative action when applied in an intelligent and businesslike manner to the problems of orchard and farm. The fruitgrower is fast learning, for instance, that the old custom of barter and sale at the farmhouse door is a thing of the past; that the industrial progress of the times has developed such rapid means for both communica-

tion and transportation as enables growers from other sections, other states, and other nations in fact, to reach out and intercept his trade. He therefore finds himself compelled to conform to present-day methods and to adapt himself to the demands of the

age in which he lives. Competition under modern methods no longer admits of his harvesting his fruit crop by shaking his fruit from the tree and gathering it up with forks and shovels to be transported in bulk to market or bins. Sharp competition and the ad-

## TARRED ORCHARD YARN

Orchardists who are down-to-the-minute in methods of caring for trees are using Orchard Yarn for supporting limbs and shaping trees. The best time for tying has been demonstrated to be when trimming and before leafing begins. All experienced growers agree that early attention is advantageous. There is no evidence that Yarn will be cheaper this year, and both time and labor can be saved by tying at pruning time.

### TWO GRADES—MANILA AND SISAL

Manila Tarred Yarn, 1 and 2-ply, 10-lb. spools  
Sisal Tarred Yarn, 1 and 2-ply, 10-lb. spools

Can be put in 5-lb. balls at  $\frac{1}{4}$ c extra.

Put up in 50-lb. shipping packages. Supplied by all merchants.

**PORTLAND CORDACE COMPANY**  
PORTLAND, OREGON



## MAKE BIG PROFITS IN CANNING

### "The National Steam Pressure Way"

UNCLE SAM says (Farmer's Bulletin 521): "Every well-regulated farm should have a home canner." A big army of progressive Farmers, Gardeners and Fruit Growers have followed this advice and are making enormous profits on fruit and vegetables put up at home with



#### Easy Way to Make Money

Any one can operate a "National" Canner. There's no mystery about it—no difficulty whatever. It is a simple, safe, easy, pleasant and healthful way to make big profits, and the investment is so small that a few days home canning pays for the outfit. You'll find a ready market in jobbing houses, stores, hotels, private families, etc.

Remember, there is a big and growing demand for better canned goods as a result of the "pure food" agitation of the past few years and people are willing to pay big prices for pure home-canned products.

#### Mail the Free Coupon Today—Now

Catalog showing all styles and sizes of "National" Steam Pressure Canning Outfits free on request; also three month's free subscription to "PROFITABLE CANNING," a magazine filled with valuable facts for home canners. Mail coupon or write today to

**NORTHWESTERN STEEL & IRON WORKS**  
929 Spring Street  
EAU CLAIRE, WISCONSIN

#### Advantages of Steam

over the "hot water" or open boiler method of canning are explained on page 25 of Farmer's Bulletin 521:—"Steam-pressure canners are the most successful for canning all kinds of vegetables and meats, because the greater heat and pressure effect complete sterilization. Steam under pressure raises the heat to about 250 degrees F., and readily destroys all bacteria and spores in fruits and vegetables."

#### The "National" Sterilizes Perfectly

The "open boiler" method fails to kill all germs because the water turns into steam and escapes at 212 degrees F. For perfect results "steam under pressure" is necessary. The intense heat generated absolutely kills all germ life. 99 percent of all large commercial canneries use "steam under pressure." There is a reason!

#### Get Your Own Prices

With a "National" Steam Pressure Canner you can be independent of the commission house and store buyers. Just can your corn, peas, beans, fruit, etc., and get your own price from the jobbing houses, stores, hotels and private homes that will be glad to take all you can put up.

Please send me—Free—Catalog and full information about "National" Steam Pressure Canning Outfits; also a free 3-months subscription to "PROFITABLE CANNING" magazine.

Name \_\_\_\_\_

Address \_\_\_\_\_

County \_\_\_\_\_

State \_\_\_\_\_ R.F.D. \_\_\_\_\_

## Vehicles and Agricultural Implements

THE BEST OF  
ORCHARD AND GARDEN TOOLS  
A SPECIALTY

**Gilbert Implement Co.**

HOOD RIVER, OREGON

## W. van Diem

Lange Franken Straat 45, 47, 49, 51, 61  
ROTTERDAM, HOLLAND

European Receivers of American Fruits

Eldest and First-Class  
House in this Branch

Cable Address: W. Vandiem  
A B C Code used; 5th Edition

Our Specialties are

**Apples, Pears, Navel Oranges**





**Vitalize your roofs**

Your roof must have power to resist the blazing sun, the forceful wind, the pouring rain and the driving snow.

Real life and resisting power come from *natural* asphalt. We use the natural asphalt from Trinidad Lake to make

# Genasco

THE TRINIDAD-LAKE-ASPHALT

## Ready Roofing

The natural oils of this asphalt stay in Genasco and make it proof against rot, cracks, and leaks.

Be on the safe side—get Genasco for all your buildings.


The KANT-LEAK KLEET makes seams watertight without cement, prevents nail-leaks, and gives an attractive finish. Ask your dealer for Genasco—smooth or mineral surface; several weights. Write us for the Good Roof Guide Book and samples.

**The Barber Asphalt Paving Company**

Largest producers in the world of asphalt and ready roofing.

**Philadelphia**

**New York      San Francisco      Chicago**

**RHODES DOUBLE CUT PRUNING SHEAR**

Pat'd June 2, 1903.

**RHODES MFG. CO.,**  
520 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

# Milton Nursery Co.

A. MILLER & SONS, Inc.—MILTON, OREGON

**Special Attention to Commercial Orchard Stock in  
Pear, Cherry, Apple, Prune**

You can buy cheaper trees for less money  
but you can't buy better trees for more money

A Catalog and Special Prices  
on Request

vancement of the times demand that his fruit be properly and promptly harvested when matured, and that it be hand picked, carefully wrapped and safely encased in regulation packages; that it be securely protected from extremes of either heat or cold, demanding warehousing, storage and other facilities involving costs usually beyond the means of the average grower.

One of the very first problems for serious consideration of a newly-organized association is, therefore, the question of how to finance the purchase of their necessary orchard supplies, the construction of warehouses and necessary shipping facilities, the meeting of pay rolls of managers, inspectors and other necessary employees in advance of the sale of his fruit and the obtaining of resulting revenue. Since his membership certificate guarantees equal voice in the affairs of the association, it follows that the membership fee should be uniform regardless of acreage or tonnage. The equality of relationship thus formed is a very potent factor in the elimination of personal jealousies and internal strife. A substantial membership fee makes for conservatism and adds strength and stability to the local association. The likelihood of withdrawal or desertions over trivial matters are in that event greatly lessened, aside from the natural advantage of early-acquired capital with which to meet the various problems usually encountered during the organization period and in advance of the shipping or revenue-producing period. One very successful organization of Eastern Washington operating under this plan has over one thousand members, each of whom has paid one hundred dollars, either in cash or interest-bearing notes, for his membership. The numerous well-equipped warehouses owned and controlled by the local units of this association testify to the wisdom of such policy.

Growers should realize at the very outset that freedom of action and immunity from the exactions of those who furnish either capital or service can only be secured by supplanting borrowed capital or hired service with that of their own. If the grower desires to possess or own the required facilities for the proper conduct of his business he must pay his just share of the costs. Bankers cannot be expected to advance large sums of money to a growers' organization in advance of a full demonstration of its conservatism and businesslike actions, and the loyal support of its membership; and for like reasons the manufacturers of box shooks, wrapping papers, nails, spray materials, etc., will be slow to extend the needed credit to a new organization against that time when it can either accumulate a working capital or otherwise demonstrate its responsibility. In two instances at least, one in the Yakima Valley, the other in Southern Idaho, this temporary financing has been very successfully and satisfactorily accomplished by each member executing collateral notes in favor of his association to the extent of ten dol-

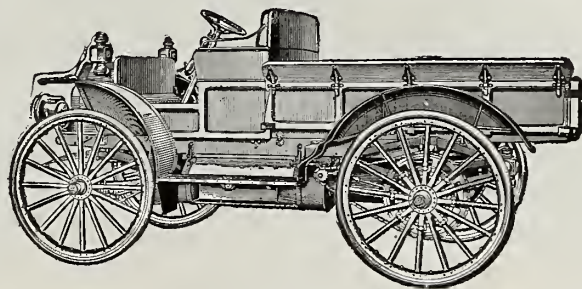


lars per acre for all acreage in his possession planted to fruit trees. In the first instance these notes aggregated the sum of sixty thousand dollars, in the second instance forty thousand dollars. In each case these notes were all cancelled and returned to their respective makers, either during or at the expiration of their first year's period, without a single dollar's loss or discount to anyone. In each instance, meantime, provision had been made for the accumulation of a working capital or sinking fund through pro rata deductions of a given amount from each package of fruit as returns were received from its marketing, that of Yakima, as originally devised by the writer, being upon the basis of five cents per box for apples, four cents per box for pears, two and one-half cents per crate for prunes, one and one-half cents per box for peaches, the first season's accumulations amounting to upward of fifty-one thousand, seven hundred dollars.

These deductions, as explained by the writer at the time the matter was under consideration by the membership, are deemed a loan from the member to his association, given to provide funds with which to properly finance and carry on the business of his association other than for operating expenses. The promissory note of the association is issued to the member equal in face value to the total of all amounts deducted from his sales for such fund; such notes are dated on the first day of either January, April, July or October first succeeding the date of settlement and run three years from date, bearing interest at the rate of four per cent per annum. These notes are in even denominations of five, ten, twenty, fifty and one hundred dollars, having interest coupons attached drawing a savings bank rate of interest. They are negotiable and have no strings or restrictions placed upon them. These deductions are made annually, hence after the first cycle of three years has been completed there will remain three years' accumulations in this fund, the fourth year's deductions liquidating the first year's obligations, and so on as long as maintained. Under this plan every member finances his own business; no man finances another's. Each member contributes exactly in the proportion he uses the machinery of his association, whether it be one box or one carload; there are no favorites, large or small.

The pleasing realization that its members are thus financing their own business upon a basis of exact equality and fairness and are reasonably free and independent of possible unwarranted exactions of money lenders, encourages loyalty and strengthens the ties of membership. This fund being composed of a large number of small deposits against which the members or depositors hold claims of respective specified amounts, due on specified dates, insures conservatism in its use, the relationship of association management toward this fund being not unlike that of a bank toward its deposits.

## International Harvester Motor Trucks



### THE I H C LINE GRAIN AND HAY MACHINES

Binders, Reapers  
Headers, Mowers  
Rakes, Stackers  
Hay Loaders  
Hay Presses

### CORN MACHINES

Planters, Pickers  
Binders, Cultivators  
Easilage Cutters  
Shellers, Shredders

### TILLAGE

Combination,  
Feg and Spring-Tooth,  
and Disk Harrows  
Cultivators

### GENERAL LINE

Oil and Gas Engines  
Oil Tractors  
Manure Spreaders  
Cream Separators  
Farm Wagons  
Motor Trucks  
Threshers  
Grain Drills  
Feed Grinders  
Knife Grinders  
Binder Twine

"I HAVE used your International motor truck daily over a route eighty miles long, through winter and summer, for the last four years, and have never missed a trip," writes one man.

Service such as this man got would add much to the profits of your fruit business, by handling your fruits rapidly at the right moment, and cutting down your general hauling expenses. An International motor truck would give you such service. Many fruit growers, realizing the advantages and economies to be secured, have long been successfully using the light running, durable International motor truck.

The solid tires cut down tire troubles. The motor is simple and has plenty of power for emergencies. The brakes are safe on any hill. The ignition system is of the best. One lever controls the car. The International is built to save you money.

Let us show you all that an International motor truck will do for you. Drop a card today for catalogues and full information to the

### International Harvester Company of America (Incorporated)

Denver—Helena—Portland—Spokane—Salt Lake City—San Francisco  
CHAMPION DEERING MCCORMICK MILWAUKEE OSBORNE PLANO

## D. Crossley & Sons

ESTABLISHED 1878

### Apples for New York and Export

CALIFORNIA, OREGON, WASHINGTON, IDAHO AND  
FLORIDA FRUITS

Apples handled in all European markets at private sale. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; **WE ARE SELLERS.** We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 to 204 Franklin Street, New York

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GLASGOW





This Hood River Apple Storage House  
IS INSULATED WITH

## Cabot's Insulating "Quilt"

at the lowest cost and with the greatest efficiency and permanence. Quilt is made of eel-grass, the fiber that will not rot, will not burn, will not harbor insects or vermin. It makes a thick cushion of dead air spaces that keeps out heat better than other insulators that cost much more and that are not permanent, sanitary or safe. One layer of Quilt is equal in insulating power (by actual test) to forty or fifty layers of common building paper. It is easy to apply, low priced and never goes to pieces in the work.

Send for sample of Quilt, with catalog and prices, to

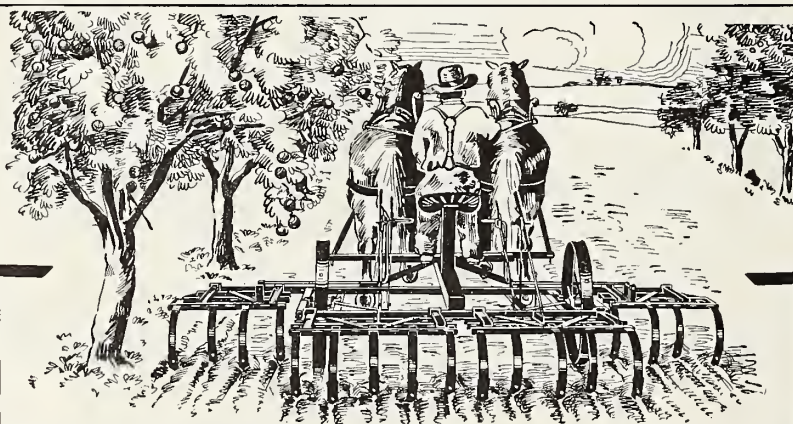
**SAMUEL CABOT, Inc., Manufacturing Chemists, Boston, Mass.**

or to the Northwest Distributors:

**S. W. R. DALLY, Globe Building, Seattle**

**TIMMS, CRESS & CO., Portland**

Conserve Wood Preservative—preserves posts, planks and all other timbers  
Cabot's Creosote Stains—for shingles, siding and other outside finish



## The Forkner Light Draft Harrow

**Broad Gauge**—Works right up to the trees. Detachable end extensions reach far out from horses' path. Gets in under the lowest branches, stirring up the soil evenly and thoroughly without breaking boughs or knocking off fruit. *Neither team nor driver has to dodge the boughs.*

**Light Running**—Two horses will cover the ground quicker, easier and better than with any other.

**Wheels Carry Weight**—not your horses' necks. Whether you ride or walk, machine has perfect balance. Broad rimmed wheels run on greased axles, carrying weight of machine and driver.

**Will Not Clog or Drag Dirt**—Frame is well up above ground. Teeth lift soil and turn it way over.

**Each Section Hinged In Front With Adjustable Couplings**—Lever regulation in convenient reach affords easy control.

**Built For Long, Hard Service**—Frame of strong, angle steel—teeth best oil-tempered spring steel.

*The Illustration Will Tell You Much* if you are at all experienced with other lines. No fancy frills—but a machine with height of wheel, breadth of sweep and arrangement of teeth that means covering a lot of ground in a day and doing it thoroughly.

*Write Tonight* for free booklet "Modern Orchard Tillage" and catalog of these labor saving implements.

**LIGHT DRAFT HARROW CO.**

601 East Nevada Street

MARSHALLTOWN, IOWA

The certainty that this money will be called for at the termination of its respective three-year period renders the management's use of it equally conservative as does the knowledge of that fact render a banker conservative in the use of his depositors' money. The fact, therefore, that this fund is after all a liability on the part of the association serves to add strength, stability and conservatism to the plan. That fact alone will give sufficient answer to those members or local districts who urge unwise or impracticable use of such funds. Each man's equity therein gives him a personal interest in the conservation of this fund which serves to stop membership demand for its injudicious or unwise appropriation.

One of the chief objections urged against the surplus fund created in the more usual manner is that no provision is usually made for the orderly withdrawal of the amount contributed by a member when, through sale or otherwise, he ceases to be a member or even a landholder. Again, it frequently happens under other plans that just about the time that a surplus fund begins to grow large enough to meet the requirements for which it was created there grows up an insistent demand among withdrawing or disgruntled members to "cut the pie" and distribute the funds. The above plan automatically provides for its own distribution and returns to each member the full amount contributed, with a moderate rate of interest annually, at the same time replenishing itself each season, taking into account the new memberships and changing relations. If one ceases to be a member or decreases his acreage it automatically adjusts itself to his changing conditions, since he withdraws through his three years' note each year's contribution to the fund and may, by trade discount or otherwise, make any disposition of his note that he may desire.

The fund thus accumulated will increase with heavy tonnage and diminish with light crops, thus nicely adjusting itself to all changing conditions. There will always remain three years' contributions in the fund, which period of time, we estimate, will safely bridge over the occasional non-productive season. In case of final liquidation of the association's affairs the three-year period provided for admits of an orderly settlement and liquidation of its affairs and safeguards any demand for precipitate or hasty action. It is not intended that funds thus derived shall be utilized in the payment of operating expenses, but that it will be employed in the purchase of supplies and such uses only whose automatic operations will safely return the amount back into the treasury. We believe this plan worthy the consideration of all strictly co-operative organizations not yet adequately provided with funds with which to properly conduct its business. In addition to any special fund thus created, each association should maintain a per package charge on all fruits passing through its hands equaling the exact cost of its



### "Gleanings in Bee Culture" Special Offer — 3 months 10c

Just to introduce this invaluable 64-page bee magazine to you, and to prove that Bees make orchards pay better, we make this Special Trial offer for a limited time. You will find it full of invaluable information about bee keeping. We will send our book, "Bee Supplies," with it Free. Send coin in envelope at our risk.

THE A. I. ROOT CO., 58 Sutter Street, San Francisco, California

### FOR THE "LAND'S SAKE"

BUY A

BOSTROM IMPROVED



Price \$15

which has TELESCOPE enabling you to read the Target over 400 yards away, and

TERRACE, DITCH, TILE DRAIN, IRRIGATE

your land properly, and save surveyor's fees. It is sold by up-to-date hardware and general merchants everywhere, and guaranteed to be the most

**SIMPLE, ACCURATE, DURABLE AND COMPLETE**

outfit ever made for all farm work. If your dealer hasn't one in stock, he will order for you from Portland, Seattle or Spokane hardware jobbers.

Write today for description of Level, and details of our MONEY BACK GUARANTEE.

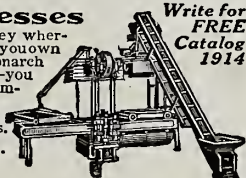
**BOSTROM-BRADY MANUFACTURING CO.**

120 MADISON AVE. ATLANTA, GA.

### Cider Presses

You can earn money wherever apples grow if you own a Monarch. A Monarch gets all the cider—you have satisfied customers. We also make apple-butter cookers and evaporators.

A. B. FARQUHAR CO., LTD.  
Box 106, York, Pa.



Write for  
FREE  
Catalog  
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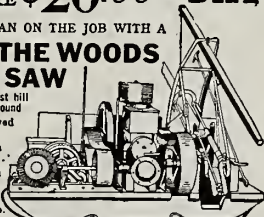
### YOU CAN MAKE \$20.00 A DAY

AND JUST ONE MAN ON THE JOB WITH A  
**KING OF THE WOODS  
DRAG SAW**

Pull it up the steepest hill and over the roughest ground. One man writes he sawed 64 ricks in 10 hours. Another sawed 40 cords in 9 hrs. Another sawed 38 cords in a day.

Another writes his machine will climb a tree. THERE IS MORE YOU SHOULD KNOW.

Write for Testimonials and Catalog D-1



**Reiersen Machinery Co.**  
Manufacturers, PORTLAND, OREGON.

### Hill's Evergreens Grow

Best for windbreaks. Protect crops and stock. Keep house and barn warmer—save fuel—save feed. Hill's evergreens are hardy, nursery-grown—low priced. Get Hill's free illustrated evergreen book and list of Great Bargain Offers—from \$4.50 up per Thousand. 56 years experience. World's largest growers. Write, P. HILL NURSERY CO., Inc. Evergreen Specialists. 287 Cedar St., Dundee, Ills.



### FREE BOOK ON RHUBARB CULTURE BERRIES AND CACTUS

\$1,000 profit per acre annually growing rhubarb  
Write for book today

**J. B. WAGNER, Pasadena**  
"The Rhubarb, Berry and Cactus Specialist"

regular operations. This charge should be held at the lowest minimum consistent with the actual needs and requirements of its work; any surplus remaining at the end of the year from such charges should be pro rated back to the members according to the tonnage each has passed through the association, or exactly in the proportion that each may have contributed to such surplus.

Successful marketing is nothing more nor less than the intelligent or "horse-sense" ability of acquiring and making effective use of knowledge respecting all elements entering into the production and distribution of the product being marketed. The much-quoted "laws of supply and demand," as applied to fruits or other perishable products, are terms to be considered in connection with, and are but relative to, those of cost and distribution; they are a fallacy and meaningless when separated from the items of cost. Even a very limited supply may exceed all demands when overpriced. Trade demand is but a desire to obtain or possess within certain limits of cost, the desire usually decreasing in substantially the same ratio that cost increases, vanishing altogether under excessive cost. Trade demand implies an accurate, unfailing knowledge of the extent and within what cost limits others desire to obtain or possess. An intelligent distribution involves a dependable machinery for the collection and dissemination of accurate knowledge of all that governs the laws of supply and demand. Professor Baldwin says that "Business has to do with the production and distribution of valuable things"; and again, "to produce such things in response to the demand and to distribute them to those from whom the demand comes is the undertaking of business."

While volumes have been written upon the subject of marketing and all manner of schemes and impracticable theories have been advanced by well meaning but inexperienced individuals, the subject holds nothing new—contains no mystery. It is but the application of good "horse sense" in the undertakings of business. In co-operative marketing the dependence upon the personal equation of individuals decreases in substantially the same ratio that the volume of business with its greater and more perfect machinery increases. Pooling of members' products likewise eliminates much of the personal equation from the producing end, and the guaranteed grade and pack of an association of recognized good standing finds ready preference over the "farmer's pack," usually handled by independent shippers or brokers who purchase or receive their stocks "ready made." Confidence again, with the trade as with the grower, becomes the foundation upon which all successful business must rest. To obtain and hold the trade's confidence one must observe the ethics of the trade and confine his dealings to the recognized legitimate factors controlling such trade.

### The Reflex Slicker

asks no favors of the weather man.



For protection against the wet, for hard service and comfort, nothing equals it. No water can reach you even through the openings between the buttons—that's where our famous

**Reflex Edges  
Protect You**

by keeping out every drop. "Stayfast" Pockets will not rip. \$3.00 Everywhere PROTECTOR HAT 75c. (waterproof) Satisfaction Guaranteed

Catalog Free **TOWER'S** FISH BRAND

A. J. TOWER CO., Boston  
Tower Canadian Limited, Toronto

### Let Me Tell You How the

**TEMPLE  
ENGINE**

Revolutionized  
Engine Building

—by radical improvements that make its service as superior to that of the "common herd" engine as the Thoroughbred is superior to the Scrub, without increasing the cost to you.

I cannot undertake to describe this engine—HERE. But drop me a postal and I will tell you how it does away—almost altogether—with ruinous VIBRATION and FRICTION—with excessive WEIGHT and BULK—with many other features that render ordinary engines so costly, so short-lived, so inefficient and so cumbersome. In the meantime—note in sectional view of the "TEMPLE," above, three of its radically "different" features, and what these mean to ENGINE USERS: INVERTED CYLINDER—with HEAD on BASE—close to the ground—eliminating vibration, causing engine to run quietly and smoothly, delivering maximum power with minimum consumption of fuel (gasoline, kerosene, alcohol or distillate).

BELL-SHAPED WATER JACKET—(see letter A) flaring toward the base, giving three times the usual volume of coolest water where it's needed—around the explosion chamber, the hottest part of the cylinder.

SMALL, LIGHT, BASE—cutting out two-thirds of floor-space and BULK and one-half the WEIGHT of other engines—making it much lighter and easier to move from one job to another.

PROFITABLE ALL-AROUND SERVICE—The extraordinary lightness, compactness and quiet running of this slow speed, heavy duty engine, make it IDEAL for running threshers, Grist Mills, Sawing Outfits, Shredders, Huskers, Sprayers, Pumps, and all other INDOOR and OUTDOOR machinery, requiring 2 H. P. to 50 H. P.

Just a penny spent for the postal you send me—brings you ENGINE INFORMATION that will be worth hundreds of dollars to you in your season's work. Now "take a chance"—risk a CENT for the postal—and LEARN SOMETHING YOU DIDN'T KNOW BEFORE.

**Temple Mfg. Company**  
216 S. 54th Ave., CICERO, ILL.  
(Formerly of U.S. Engine Works.)

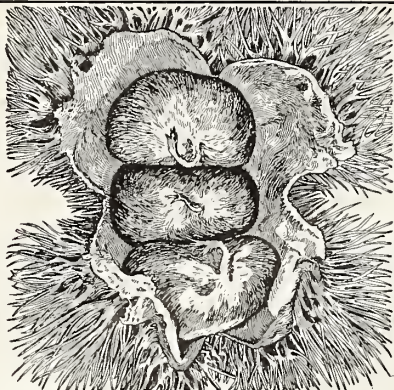
### Store Your Apples in Spokane

The Natural Storage Center

Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

**Ryan & Newton  
Company**  
Spokane, Washington





## SOBER PARAGON

### Large Sweet Chestnut, Grafted Trees

BEARS while in nursery, a great cropper — adapted to West; hardy—suited to warm and cold climates.

SUCCEEDS on variety of soils. Great sale for nuts at good prices.

ONE orchard's crop brings in many thousands.

A CHESTNUT orchard will mean a large income; starting at early age; few trees supplies a family.

Sober Paragon registered U. S. Pat. Office, RIGHT now send for pamphlet. Have a full line of all nursery stock.

**CARLTON NURSERY CO. CARLTON OREGON**

## RELIABLE TREES

### For British Columbia

We offer for the coming season the most complete and best selected stock of both FRUIT AND ORNAMENTAL TREES in the country. If you want home grown, first-class stock, handled under closest observation of all details which long experience alone can teach, you are the man we want to supply. Write today for prices or see our representative in your section.

### LAYRITZ NURSERIES

Victoria, British Columbia

## VIA SPOKANE AND Northern Pacific Ry. TO THE EAST

ASK THE LOCAL AGENT FOR THAT ROUTING

### Eastbound Summer Tourist Fares June 1 to September 30

Tickets on sale daily.  
Return limit October 31. Liberal stopovers.

### And These Earlier Excursion Dates

April 20, 25, 30, to Norway, for Norwegian Centennial. In connection with all Trans-Atlantic Steamship Lines.

May 19 and 20, to Chicago, for Musical Festival and Presbyterian Assembly.

May 2, 3, 4, 5, 6, to Atlanta, Ga., for Shriners.



### Rates Open to All

Write for rates, routes,  
train service.

**A. D. CHARLTON, A. G. P. A.**

PORTLAND, OREGON

An association cannot make headway if it undertakes to serve both the wholesale and retail trade; one cannot hope to secure and hold the patronage of the former when himself attempting to supply the very same trade that the wholesaler intended supplying with the product he purchased,—“One cannot eat his cake and have it too.” An association, to maintain good standing with the trade and to become a factor of any consequence, must have and maintain the same ethics, code of morals and fixed business principles that both serve and guide every notable commercial success of the age. Fruit dealers, like other merchants, are quick to recognize good service, superior quality and fair dealing; they, like other merchants, prize those trade connections whose dependability they have proven, whose reputation for fair dealing remains unquestioned. The association which makes no distinctions in reference to fair dealings between that accorded its own members and that accorded to its trade will not likely lose the confidence or support of either.

An association, like an individual, cannot long succeed half honest and half dishonest; the same unerring code of honor and rule of fairness that forms the standard of relationships between and among its members should apply with equal force and in like degree to its trade and all business relationships. Those with capital to invest in the purchase of our products should be viewed in the light of prospective partners instead of that of distrust and suspicion. Any marketing policy, to become effective in results, must take note of existing crop conditions and invite the trade's co-operation in absorbing its tonnage at such time and in such manner as will be mutually profitable and satisfactory.

If the association controls a sufficient percentage of the tonnage of a given product it is then in a position to maintain a protective policy against declining markets and in support of tonnage already sold and yet to be sold. This can be quite effectually accomplished as was done by one large distributing agency during the present season, wherein the usual declining markets that frequently result in acute demoralization through the accelerated downward movement, heretofore always occasioned by the flood of harvest-time offerings, was corrected by defining and strictly adhering to a definite fixed policy of marketing that invited and secured an early and hearty enlistment of the purchasing power and distributing machinery of the leading legitimate trade factors.

The efficiency and wisdom of that policy we believe to have been clearly demonstrated during the season just past. Instead of waiting until approaching winter and climatic conditions force heavy offerings upon the market in such quantities as to create impressos of an overabundant supply, even in light-crop seasons, this policy seeks to establish prices early in the season sufficiently inviting to





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encourage bookings from the trade somewhat in advance of harvest time, and then by a gradual and orderly stepping up of the price from time to time, such as the laws of supply and demand, under a wise and intelligent distribution seem to justify; it places both grower and dealer upon an advancing market, creating feelings of prosperity and of optimism by reason of profits earned from day to day on stocks on hand or previously purchased. It further demonstrates to the trade both the desire and ability to aid him to a fair and equitable profit in return for his advance patronage. It early in the season sets in operation the necessary machinery looking to an earlier consumption and a wider and better distribution of our fruits.

The trade, having made an investment and becoming interested thus early in the season, naturally become "bulls" instead of "bears" upon the markets. Small dealers observing that large factors have made early purchase are thereby influenced to invest before additional advancement takes place, and the whole deal is surrounded with a spirit of optimism and the required aid from the strong and influential factors necessary in the creating and sustaining of healthy market conditions. The natural operations of this policy also influences the retailer to establish his prices to the final consumer upon the lowest cost basis of the season instead of upon the very highest, as under former policies; this in itself is no small factor from the standpoint of consumption. Again, with a constantly advancing market the temptation on the part of the trade to make rejections is very materially lessened and the percentage of f.o.b. sales is very decidedly increased. The accustomed slump, with its attending demoralization and glutted markets during the harvest period, is almost wholly avoided through the fact that shipments then going forward are in fulfillment of orders previously booked instead of pressing for a market.

The successful maintenance of such marketing policy demands that each member of an association and each local of affiliated associations make available his just share and percentage of fruit at both the opening price and at each succeeding step in the price making leading up to and making possible his final maximum results. This leads up to the true test of co-operation from a membership standpoint, loyalty and confidence,—of whether these are sufficiently strong and deep rooted with the individual grower to dispel selfish considerations and prompt him to place his harvest at the disposal of his sales department, sharing equally with his fellow members in the price making as well as the price getting.

Much could be said with reference to the machinery and details in preparation for marketing, the time allotted, however, forbids extended reference thereto. An ideal machinery is that admitting of exclusive salaried agents within all principal markets, but its



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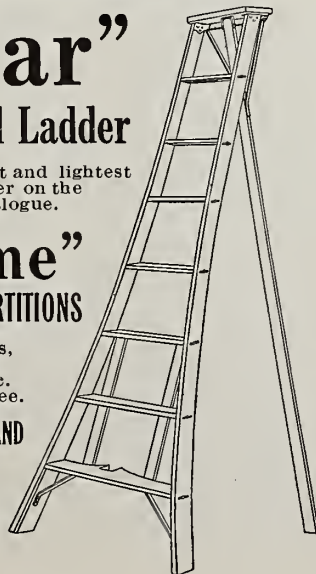
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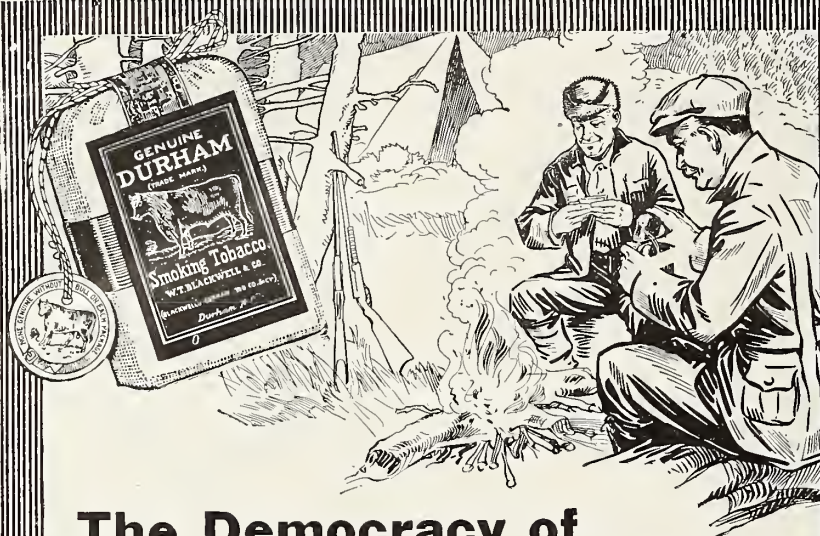
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Electric and hand power. The only Exclusive Vacuum Cleaner Store in the state. If we haven't what you want, we will get it for you. All machines fully guaranteed. Other machines taken in exchange.

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## The Democracy of "The Makings"

Environment doesn't make a man—or a "Bull" Durham smoker. There are red-blooded, self-reliant, energetic men in every walk of life—and these are the millions of men, of all classes and occupations, who find thorough *satisfaction* in the fresh, fragrant cigarettes they *roll for themselves* from "Bull" Durham tobacco.

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Ever notice that aromatic flavor, that unique savor? That's a secret "Bull" Durham process. You get it only in "Bull" Durham.

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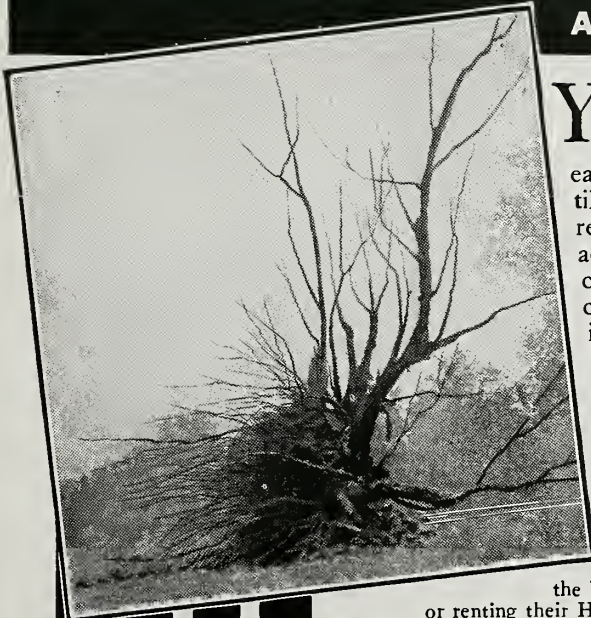
building and maintenance are entirely dependent upon the quantity of tonnage at its command and the resulting revenue applicable to its support. The nearest approach thereto is the maintenance of a limited number of salaried or branch offices at the more prominent trade centers, each supervising the exclusive trade agents or brokers that may necessarily be employed within his territory. Such policy, when wisely maintained under a constructive policy, is susceptible of expansion from time to time, as tonnage and resulting revenues increase, and has been found to most admirably adapt itself to the expanding requirements of a successful organization. The employment of specialized talent and men of tact, judgment and recognized ability in the various departments and divisions of the work, the devising and maintaining of a complete system of audits and of the necessary blanks, records and detailed systems for the accurate, proper and expeditious handling of the enormous amount of detail incident to the fruit industry must necessarily fall under the direction and control of a competent management.

The interest being taken in the apple is becoming far more general and universal than ever before. A few years ago such a thing as "Apple Day" would have been an impossibility, but apple growers are beginning to receive the attention they deserve. The public institutions and commercial bodies are beginning to give "King Apple" the attention he deserves. In the days of our forefathers the apple apparently was far more generally used than it has been during the past few years. Many reasons are being advanced. It looks very much as if the orange, banana and grapefruit business has caused the apple to be neglected to a greater or lesser extent. In fact with many it is almost a forgotten article of food. The apple growers themselves have started to awaken the public and are meeting with splendid success. Through the efforts of the apple growers "Apple Day" was created, and was celebrated this year very extensively on November 18. Everyone seemed to take an interest, and it was particularly noticeable in Portland, Oregon. The Oregon-Washington Railroad & Navigation, the Northern Pacific, the Southern Pacific and the North Bank Railroads had a special apple menu for that day. The large hotels in Portland also observed the day by preparing special menu cards, illustrated with apple scenes, and served apples in many appetizing ways, including the good old-fashioned dishes, such as duck with apple fritters, roast pig with baked apple, veal with apple dressing, roast goose stuffed with apple, apple sauce, baked apples, apple dumpling, apples and cream, etc. Among the principal hotels serving special dinners on that day were the Portland, the Imperial, the Multnomah and the Oregon.

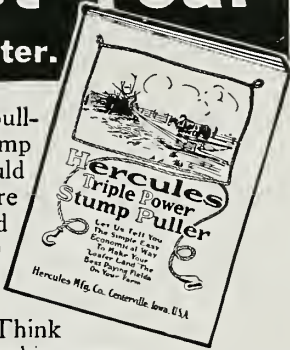


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And \$750 Every Year After.



**Y**OU can double the land value by pulling out the stumps. If your stump land is worth \$20 an acre—it would easily be worth \$40 an acre if it were tillable. On 40 acres the increased realty value would be \$800. On 40 acres of cleared land—*virgin soil*, you could easily raise 1500 bushels of corn—at 50c per bushel—\$750. Think it over Mr. Farmer. Stumps cost you big money. With land values going up—and crop prices as high as they are—you *can't afford* to keep on paying taxes for land that doesn't bring in a cent.



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## HERCULES All Steel, Triple Power Stump Puller

It will pull up any size stump, green tree or hedge in five minutes. It will clear an acre or more of stumps a day.

I want you to bear in mind that the Hercules is the only Triple Power, All Steel Stump Puller made; that it can be changed from triple to double or single power in a moment's time without trouble; that it is the only stump-puller having all the working parts machined and finished to reduce friction—hence the lightest draft machine. I want you to remember that the Hercules is 60 per cent lighter and 400 per cent stronger than cast iron or the so called semi-steel or new process steel which are catchy phrases now-a-days used to describe cast iron pullers; that you can clear almost three acres without moving the Hercules that the double safety ratchets absolutely prevent accident to the men or team.

## Guaranteed for Three Years

The all-steel construction, the triple power feature that saves your team and gives a tremendous increase of power, the double safety ratchets and careful turning and machining of every part—all these things make it safe for us to guarantee the replacement of any casting of a Hercules that breaks at any time within three years, whether it is the fault of the machine or your fault. Could any guarantee be fairer or stronger?

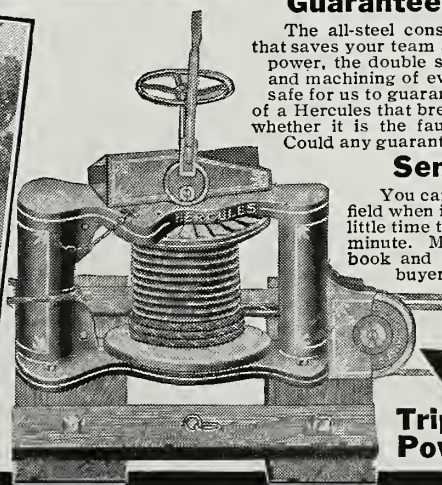
## Send In Your Name

You cannot afford to have stumps in your field when it is so easy, so cheap and takes so little time to pull them out. Don't wait another minute. Mail me a postal at once for my fine book and my low introductory offer to first buyers. Address me personally,

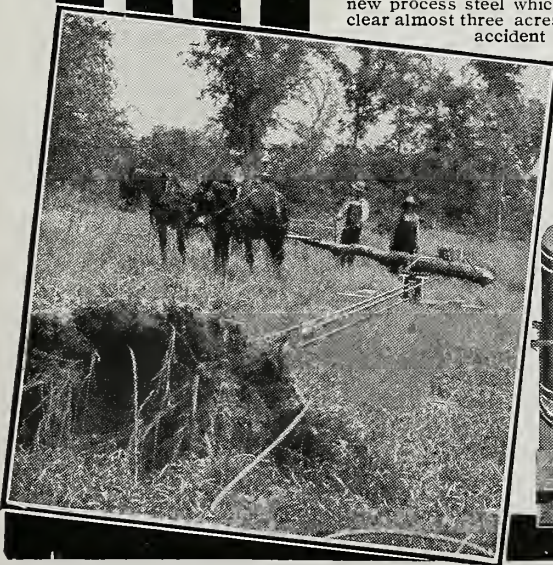
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THE WORLD

OUR ORCHARD

*The Fruit Merchant is unquestionably the aristocrat of the commercial world, for it is he who deals in and distributes not only the most beautiful but, also, one of the most useful products of nature.*

# Apples in Boxes

The biggest element of value in the Northwestern box apple to everybody concerned is **STABILITY**.

Growers have not only made it standard by methods of culture and packing far beyond anything previously known in connection with the fruit, but have provided a complete range of standard varieties that makes the product staple in the market all year round, and over a large part of the world.

It is this element of **STABILITY** more than anything else that gives the Northwestern box apple the preference with purchasers of fine table fruit. It is bought for its trustworthy standards as much as for its quality, and proof of this is found in the fact that any lowering of standards would quickly destroy the trade.

**STABILITY** is the biggest element of value in the Northwestern box apple **TRADE**.

For with a standard product the true merchant can step in and perform his service. Mercantile service is as indispensable to producer and consumer as the service of transportation. For the true merchant cultivates the demand. He finds it, stimulates it, conserves it, increases it. He deals with the purchasing public at close range and makes good any falling off in the standards, accidental or otherwise. He combines the best in one product with the best in allied products, making himself a permanent trade center to which the purchasing public will find it most convenient to turn year after year, not only for supply, but for responsibility. And he holds the producer up to the present standards and constantly sets new ones before him.

In connection with the Northwestern box apple,

## STEINHARDT & KELLY

have performed the function of true merchants.

To the purchasing public they bring the best fruit the world affords.

And to the grower who realizes the immense importance of **STABILITY** and who has seen the demoralizing effects of speculative marketing, they offer an outlet that is available year after year, of ever-growing capacity, and which more than anything else, possibly, has established for the best packs of Northwestern box apples those rational, non-speculative f.o.b. prices which are absolutely necessary for the future growth of the trade.

There will always be fashions in marketing, and it will always be in human nature to demand that new experiments be tried.

## STEINHARDT & KELLY

believe, however, that the growers in the Northwest who see furthest, understand the mercantile trend of the trade as clearly as themselves, and that therefore they can continue to depend upon the co-operation of the grower who conducts his plant as a staple business for the fine fruit that is necessary in extending their trade as a staple business.

**Steinhardt & Kelly**  
**NEW YORK**

OUR MARKET

THE WORLD